14.7.67

S. 153. A.11.

S.153 A.

THE

LINCOLNSHIRE NATURALISTS UNION

CONTENTS

President's Address:—The Natural History of Insect Reproduction
G. A. T. Jeffs, F.R.E.S.

Report of the Hon. General Secretary, 1961

Report of the Hon. Membership Secretary and Treasurer, 1961

Report of Hon. Field Secretaries, 1961

Junior Section Report, 1961

Sectional Officers' Reports:—Botany, Bryology, Lichenology, Mycology, Entomology, Arachnology and Ornithology.

TRANSACTIONS

Edited by
F. T. BAKER, M.A., F.S.A., F.M.A., A.L.A.

Vol. XV. No. 3 **DECEMBER, 1962**

LINCOLN
Keyworth and Fry Ltd., Swanpool Court

Have you joined ?

Lincolnshire Naturalists' Trust Ltd.

FORMED 1949

President : R. K. CORNWALLIS, M.A., M.B.O.U.

Chairman: G. H. SEAL, Willingham-by-Stow.

Hon. Secretary: A. E. SMITH, M.A., "Pyewipes," Willoughby, Nr. Alford, Lincs

Hon. Treasurer: W. M. PEET, A.C.I.S., Barclay's Bank, Sleaford, Lincs.

Formed by Lincolnshire naturalists to promote the conservation of our native vegetation and the rich and varied animal life which it supports. The Trust will acquire and maintain nature reserves and develop the study and protection of wild life throughout the County.

Membership of the Trust is open to everyone on payment of:

A sum of not less than £10 for Life Membership,

or

An annual amount of not less than 10/- for Ordinary Membership.

A fund has been established for the purchase of reserves and for providing a Gibraltar Point Field Research Station. Special donations to this fund would be welcomed.

Applications for membership and general enquiries to the Hon. Secretary, 'Pyewipes', Willoughby, Nr. Alford, Lincs.

Lincolnshire Naturalists' Union

Founded June 12th, 1893

LIST OF OFFICERS, 1962

President:

MR. FRANK NORRIS, F.C.C.S., 120 Church Lane, Scunthorpe.

Hon. General Secretary: Mark R. D. Seaward, B.Sc., The Grammar School, Brigg.
Hon. Membership Secretary-Treasurer: Mrs. D. J. Adams, 45 Yarborough Crescent, Lincoln.
Hon. Field Secretaries: B. C. James, c/o 31 Mainwaring Road, Lincoln.
Philip E. Gipps, 10 South Street, Louth.
Hon. Editor: F. T. Baker, M.A., F.S.A., F.M.A., A.L.A., City and County Museum, Lincoln.
Committee: Miss E. J. Gibbons, R. K. Cornwallis, M.A., M.B.O.U., G.A.T. Jeffs, F.R.E.S.
Hon. Auditor: Robert Withers, Advance Publicity Service, 20 Friars Lane, Lincoln.

JUNIOR SECTION

Hon. General Secretary: E. V. Wray, F.L.S., Selwood, 14 Church Lane, Humberstone, Nr. Grimsby.
Hon. Assistant General Secretary: Mrs. B. Watkinson, 77 Coronation Road, Cleethorpes.
Hon. Field Secretaries: Alan J. Gray, Bowness, Town Road, Tetney, Nr. Grimsby.
Stanley J. Houghton, 128 Bridge Street, Gainsborough.
Committee: Miss E. J. Gibbons, Mrs. J. S. Ruddock, R. Coultas, G. H. Seal, Shirley Derry, Robert Seal.

SECTIONAL OFFICERS

Geology:

President: Professor H. H. Swinnerton, C.B.E., D.Sc., Headmasters's House, Haberdasher Aske's School, Elstree, Herts.
Secretary: C. H. Walker, Omega, Glandford Road, Brigg.

Botany:

President: Dr. R. W. Butcher, The Fisheries Laboratory, Burnham-on-Crouch.
Secretary: Miss E. J. Gibbons, The Hall, Holton-le-Moor, Lincoln.
Mycology: Miss G. M. Waterhouse, M.Sc., Commonwealth Mycological Institute, Kew Green, Surrey.
Bryology and Lichenology: Mark R. D. Seaward, B.Sc., The Grammar School, Brigg.

General Invetrebrate Zoology

Arachnology:

Secretary: G. W. Whatmough, M.P.S., 8 St. Catherines Road, Lincoln.

Entomology:

President: T. H. Court, F.R.G.S., The Pingle, Mill Road, Market Rasen, Lincs.
Lepidoptera: G. A. T. Jeffs, F.R.E.S., Nuns Holm, Nuns Corner, Grimsby.
Coleoptera: E. C. Riggall, 201 Eastgate, Louth.
Economic Entomology: B. A. Cooper, B.A., B.Sc., A.R.C.S., F.R.E.S., Shardlow Hall, Shardlow, Derbyshire.

Vertebrate Zoology:

Mammals: Frank Norris, F.C.C.S., 120 Church Lane, Scunthorpe.
Ornithology: R. K. Cornwallis, M.A., M.B.O.U., Bleasby Grange Farm, Legsby, Market Rasen.
A. D. Townsend, M.B.O.U., 11 Bassingham Crescent, Lincoln.

Microscopy:

President: S. H. Robinson, Ph.D., M.Sc., F.R.M.S., The Homestead, York Avenue, Lincoln.
Secretary: R. J. Batters, B.Sc., 85 Cecil Street, Lincoln.

Photography:

President: R. J. Batters, B.Sc., 85 Cecil Street, Lincoln.
Secretary: W. L. Young, B.Sc., 19 Smith Street, Lincoln.

STATEMENT OF ACCOUNT

from January 1st to December 31st, 1961

INCOME AND EXPENDITURE ACCOUNT

Receipts	£	s	d
To Balance, 1st January, 1961, at Midland Bank ...	313	10	9
,, Savings Bank Special Investment Account ...	268	3	3
,, Interest to 10th April, 1961	3	11	6
,, Savings Bank Ordinary Dept.	56	13	10
,, Interest to 10th April, 1961		9	4
,, Members' Subscriptions	257	1	0
,, Donations to Publication Fund	20	10	0
,, Sale of Books and *Transactions*	24	2	0
,, Interest on Defence Bonds	3	0	3
,, Interest on Defence Bonds	12	10	0
,, Cash from *Sea Bird Summer* Film...	23	7	6
	£982	19	5

Expenditure	£	s	d
By Purchase of Defence Bonds (money reserved for publications)	500	0	0
,, Cash paid to Lincolnshire Naturalists' Trust from *Sea Bird Summer* Film	23	7	6
,, *Transactions* Vol. XV No. 1 To printing, blocks, and off-prints and postages	195	17	0
,, Printing of stationery and membership cards ...	7	0	1
,, Subscriptions to Societies, Council for Nature, B.S.B.I., B.T.O., B.H.S., B.B.S., B.B., C.P.R.E.	9	11	0
,, Secretarial expenses, Mr. Baker, Mr. Gipps, Mr. Seaward, Mr. Wray, Mr. Townsend	32	10	3
,, Duplicating, distribution and postages of notices	89	3	6
,, Prizes, Competition Shield for Junior Section ...	12	18	0
,, Hire of room at Technical College		10	0
,, Bank charges and cheque book	1	5	0
,, Balance at Midland Bank, 31st December, 1961	110	17	1
	£982	19	5

Audited and found correct, 22nd May, 1962.

ROBERT WITHERS.

Presidential Address

Delivered at Lincoln, March 11th, 1961

by

G. A. T. JEFFS, F.R.E.S.

THE NATURAL HISTORY OF INSECT REPRODUCTION

Entomology has advanced tremendously since the days of our forefathers, when it was generally supposed that insects were generated spontaneously from decaying organic matter, whereas in fact reproduction is the unique property of living things. The two most powerful instincts among living insects, are the desire to feed and, where the co-operation of two individuals is necessary to secure the continuation of the species, the desire to mate.

In order to fulfil a desire to continue the species, insects must first search for and find a mate, and this is where secondary sexual characters such as colouration, scent, aerial displays and song play their part. With the exception of the protective odours used to scare away enemies, as for example in the case of the Bombadier Beetle (*Brachinus crepitans*), odour is a most powerful mating stimulus and particularly so in the case of lepidoptera, whose males distribute scent by specialised scales called androconia and the females by glands at the hind end of the body. These two sources of scent each produce a different type of odour, the aphrodisiac scent from the male, used to charm and excite his mate when at close quarters, and the directive scent of the female, the power of which in certain species of moths is very strong indeed and can influence males over great distances, as is shown by the method often employed by collectors—called 'assembling'. A captive virgin female will attract many males, sometimes up to as many as 20 or 30 can be seen fluttering around her cage at a time. Under suitable weather conditions, it has been reported that distances of up to three miles have been covered by assembling males. The strange thing is however, that the female directive odours are not perceptible to the human beings' sense of smell, whereas some of the aphrodisiac scents of the male can be detected quite readily, for example the smell of lemon verbena produced by the male Green-veined White (*Pieris napi*), and the faint smell of an old cigar box from the Meadow Brown (*Maniola jurtina*). One example which will illustrate very forcibly the power of the directive odour of a female over a male, and at the same time show mating to be an entirely automatic behaviour, where devotion plays no part, was instanced when a scent gland, which had been cut off from the hind body of a female and placed in an open box, was found to hold the same full powers of attraction for the male, as did the original complete female insect. In fact the male even went as far as attempting to mate with this amputated gland.

In general, when males are attracted from great distances, as in the case of Emperor Moths and the Eggars, they normally possess bipectinated or feathery antennae, which, because of their much greater area can carry a far larger number of the sensory organs with which to detect the female scent. It is interesting to mention that specimens which have lost one antennae, whilst they can detect a female, are unable to orientate themselves upon the source of the scent, and if both antennae are missing, they fail completely to detect the female.

Grasshoppers and Crickets are more romantic during their courtship, since the usual method of bringing together the sexes of Orthoptera, is for the male to serenade his mate with a song, but of course in fact, no insect has a true voice, it is merely a grating sound, made by the rubbing of hard surfaces of certain parts of their body together. The jumping Orthoptera have developed remarkable powers of stridulation caused by rubbing up and down their hind femur against the wing case. They can even produce sounds above our normal hearing range, that is in excess of something like 17,000 vibrations per second.

Swarming also plays an important part in courtship, whether it is the small gathering of furry Yellow Dung Flies which congregate during the summer in such unromantic places as cow-pats, to await the arrival of their females, or the large dancing swarms of May Flies and midges commonly seen over ponds and streams. In the case of the Yellow Dung Fly (*Scoteuma stercorarium*), the assembly of these bright coloured males soon attracts the attention of a female, who quickly finds a male, and together they fly away. After pairing, the female will return, perhaps to the same cow-pat upon which she will lay her eggs. The mating swarms of Chironomous Midges are more spectacular, and take the form of aerial dances, rising and falling together rhythmically. These swarms consist mostly of males, the number of females is usually very small indeed, but every now and again a couple will leave the main body and fall to the ground where they pair. The Common Gnat (*Culex pipiens*) and the Mosquitoes are rather more particular about conditions before they will swarm and mate. Mosquitoes choose evening time when the light intensity is very low—say about 2.0 foot candles, a bright light will disturb them and even put them off mating completely. The Common Gnat usually swarms only just after sunset, and then nearly always to the leeward of some object which provides them with shelter. The females are attracted by the humming noise and are quickly drawn into the swarm, where they are seized by a male, the pair then drop out of the aerial dance on to the ground, where mating takes place. In some species of gnat the mating swarms, instead of surging up and down, swing from side to side. In the case of May Flies, mating swarms are made up mostly of males flying to and fro over the surface of some stream or pond, awaiting the arrival of females, who upon joining the swarm soon become paired, and together the male and female will fly away on their brief honeymoon.

The best known nuptial flight of course is that of the Queen bee—who leaves her nest a bride, but returns a widow, for when she leaves the hive, she makes a dash for the blue sky and is quickly followed by swarms of males, but as she flies higher and higher her male followers become less and less in number, until finally all but one have been forced through weakness to give up the chase, and he alone remains to claim the bride, however this great moment of his life is also his last, for after mating he falls to the ground dead. Another nuptial flight, but one which is by no means so well known is that of the tiny moth *Acentropus niveus*, whose males can often be seen at dusk in suitable localities, zig-zagging vigorously over the surface of shallow stretches of water, and because no attractive scents can possibly pass through water they must fly low, for they rely upon being seen by the females, who actually live below the surface in the water, they are in fact, aquatic moths. This species has two different types of females, one fully winged and capable of flight, of which very little is known, and the other which has only very small wings and remains under water all its life. The latter swim actively by means of their legs and rise to the surface under the swarms of males for mating; this may take place on the surface, or the female may grab the male and drag him under water, in which case it is extremely doubtful if he ever reaches the surface or air again.

There are of course many less obvious forms of courtship. The tapping noise made by the Death Watch Beetle (*Xestobium rufovillosum*), held by superstition to be a warning of approaching death, is a mating call made by the insect knocking the fore part of its head against the wood. The male Scorpion Fly (*Panorpa communis*) adopts another method of courtship. After finding a female he will commence to woo her by spitting out little droplets of saliva on to the leaf where she is resting, and as soon as her interest is aroused and her attention occupied by these droplets, the male seizes her and proceeds to mate.

Some flies make offerings to their females; for example the little black flies of the *Hilara* species, which are so often seen flying to and fro over ponds and puddles, mate whilst in flight. However, before doing so, it is their custom to capture a smaller insect, such as a midge and encase it in silken threads, and to offer this dainty morsel to a mate. Similarly, their close relative the Empid Fly also favours his mate with an offering of some smaller fly—the purpose in this case is first to crave her attention and then to keep her mind occupied by feeding whilst mating takes place; otherwise being a cannibal and not too discriminating, she would quite likely make a meal of her husband.

I mentioned earlier that courtship and mating are the general rule when the co-operation of two sexes is necessary to bring about reproduction, however there are forms of reproduction which are not dependent upon the act of fertilisation by a male; this phenomenon is known as parthenogenesis. This is a form of reproduction which

exhibits a multiplicity of phases: the sporadic, constant and cyclic phases.

Another complication can also arise which is called polyembryony. This is where the insect lays a single egg within that of another insect, and this egg in turn gives rise to a multiplicity of larvae. This happens in the case of a minute Chalcid, which is a wasp-like parasite that lays its egg in that of the Silver-Y moth (*Plusia gamma*). The egg produces hundreds of parasitic grubs which feed within the body of the so far unsuspecting host larva of the moth.

However, to return to the more logical sequence of events in a normal metamorphosis—that is after courtship and mating, the laying of fertilised eggs. The number of eggs laid by a female varies considerably according to the species, and the time it takes for an egg to hatch differs greatly from the almost live or viviparous birth in some of the Flesh flies, to moths and butterflies, where many spend months in the egg stage.

It is important to remember that the actual number of eggs laid by any female is no guide to the abundance of that particular species of insect. The number of eggs laid varies according to the hazards which the normal development of the individual has to face. A good example of an insect possessing great fecundity, is the Oil Beetle (*Meloe proscarabaeus*). Here the female may lay anything up to three or four thousand minute eggs. The resultant larvae are tiny little yellow active creatures with long legs, and their struggle for survival is beset by many dangers, by no means least of all the necessity of finding an Anthrophora Flower bee. When these larvae are newly hatched they wander around climbing up plant stems and into the flowers, in the hope of finding, and becoming attached to one of this particular type of bee, and if successful, they will thereby gain access to the bee's nest, although many are of course destined to failure, by becoming attached to flies or perhaps to the wrong type of bee, and will thus perish through starvation. However, the few lucky ones finally get carried to the bee's cell, which has been previously provisioned, then at the same moment as the rightful owner lays her egg upon the honey, the beetle larva drops off into the cell and thereafter is assured of a plentiful food supply. The larva soon destroys the rightful owner's egg, completes its growth, and transforms into a pupa. This is an example of hypermetamorphosis, where the larva of an insect adopts two different forms during its life history. The Oil Beetle larva is well formed, when newly hatched, having a well-armoured body, relatively large head and each foot possessing a claw for clinging to the body of the bee. The body of the later stage, after it has spent some little time in the cell of honey, becomes stout with only a thin cuticle, and assumes a completely legless condition just before pupating. Further examples of hypermetamorphosis are found among parasitic Strepsiptera, which are minute insects related to beetles, whose males have tiny twisted forewings and broad hindwings, while the degraded, wingless and legless females live in the bodies of

other insects such as froghoppers and wasps. The tiny first stage larvae are very active, with feelers and legs, and crowd over the host's body, those that find opportunity then bore into the host's skin. Here they moult and assume a soft and legless form, suitable to their parasitic mode of life.

The extreme to the prolific egg-laying of the Oil Beetle is illustrated by the Sheep Ked (*Melophagus ovinus*), whose life history presents a very different story. Here the female has degenerated into a wingless parasite, that lives among the wool of sheep, feeding upon the warm blood. Here she passes a sheltered existence, and prefers to retain the single egg she produces within her body, where it grows into a fully fed larva, nourished by its mother's secretions and away from all external dangers until it is born, whereupon it immediately pupates, changing into a new Ked in the course of a week of so. The female Ked thus assured of a very good survival rate for their offsprings, only produces about ten larvae during her whole life.

The Warble-flies, whose larvae are parasitic upon cattle, have eggs with flanges to attach themselves to their host. In the Ox Warble-fly (*Hypoderma bovis*), the females lay their eggs low down on the legs of cattle, where upon hatching the larvae enter the skin and make their way up to the animal's chest, and from here they proceed to a position just beneath the skin on the back, a journey which can take up to ten or twelve weeks. When they arrive at this position, they change their habit and complete their growth without further journeying. They perforate the host's skin to make a breathing hole, which results in the familiar swelling surrounded by puss and generally known as a 'Warble'. After approximately another two months' time, the fully developed larva emerges through this breathing hole, drops to the ground and pupates.

The female Sheep Bot (*Oestrus ovis*) has a similar type of life history, in that the early stages are passed in comparative safety. The female fly, which is viviparous, deposits her living larvae in the nostrils of sheep. Here they remain, hanging by special hooks, and feeding for about nine months, sometimes causing their host to suffer from fits. When fully fed, these larvae release their hold and are sneezed out by the sheep on to the ground where they pupate.

The Horse Bot-fly (*Gasterophilus intestinalis*) spends its parasitic life in a somewhat similar way, except that the female lays her eggs on either the legs or stomach of a horse, and in such a position that they can be reached by the horse's mouth. It is the friction caused by the tongue and lips that hatches the eggs, and the young larvae attach themselves to the tongue, and are ultimately swallowed. They cling for about nine months to the stomach lining, and after attaining their full growth, they release their hold and pass to the ground by way of the animal's excretions, where they pupate.

Many other methods of ovipositing are adopted, such as the eggs being superficially inserted into the tissues of plants, as found in

Homoptera, and those more deeply inserted into the tissues which cause galls, as in some of the sawflies. In this case the females are provided with a special apparatus—a beautiful fretsaw for making these deep incisions into the plant. Cynipids, the Gall-flies, cause the formation of oak apples and the ornamental pink bedeguar or 'pin-cushion' galls of the rose. Some butterflies, such as the Ringlet (*Aphantopus hyperanthus*), just scatter their eggs as they fly over meadows, for they are certain of their larvae, being grass feeders, falling on their correct food plant. Cockroaches lay sixteen eggs, which are all enclosed in a little hardened case. The little yellow beetle *Hilochares lividus*, is remarkable in that the female carries her egg-sac around with her attached to her abdomen. A few insects show even more developed signs of maternal interest, for they look after and care for their off-spring. The female Earwig may be seen sitting on her eggs, and when they hatch she covers small numbers of the brood with her body. The Mole Cricket (*Gryllotalpa gryllotalpa*), constructs an underground nest and also shows similar attention by defending her eggs and offspring, which in this case may number up to 300, from predaceous Ground Beetles, and also from the males of her own species, who are addicted to cannibalism. In the case of the Bug, *Alasmicha grisea*, which is very aptly named the Parent Bug, the female watches her egg batch, numbering 30-40, for two to three weeks. After hatching, the young remain together in a flock with their mother in attendance. At a later stage in their development, however, the mother commences to move about more freely, and then these young immatures follow her around, almost like chicks follow a hen.

Lacewings, whilst not concerning themselves very greatly with their offspring, deposit their eggs at the end of a little stalk, this is to prevent them being attacked by fungi. Insects whose larvae live in water, such as Midges and Caddis-flies, surround their eggs with a mass of jelly. In the *Miltogramma* species of Flesh-flies, the females in addition to laying their eggs upon the stored up food of Mining Bees, also lay them in prey which has been previously paralized by a Digger Wasp for the very same purpose. These Flesh-flies lay in waiting for the wasp to bring her anaesthetised victim, which could be either a fly, or a caterpillar, back to her burrow, and just at the critical moment, and unbeknown to the wasp, she deposits an egg within the motionless prey. The unsuspecting wasp then puts it into the cell, there she herself deposits her own egg upon it, but the fly larva hatches first and develops more rapidly, thus starving the rightful owner to death. It is interesting to note that prey so anaesthetised does not, as would be expected, putrefy, but remains fresh for the parasitic larva to feed upon when it hatches out some weeks later.

The degree of putrifaction however does not matter in the case of the common black and orange Burying Beetles (*Necrophorus vespillo*). These seek out some dead body of a small animal laying on the ground, and proceed to bury it by excavating the earth from underneath the

corpse and when buried they lay their eggs on it. The decaying carcass provides food for the subsequent larvae.

The second stage in the growth or metamorphosis of an insect is passed as a larva or nymph, and it is upon this stage that two divisions in their classification are based. The class Insecta contains, according to most authorities, 23 orders which are divided into two sub-classes—Apterygota, which are the true wingless insects and which undergo little or no change during their development. The other sub-class is termed Pterygota, or the winged insects, which embrace 19 orders and these are divided into two divisions. The first division is called Exopterygota —comprising insects in which after the egg stage their wings develop externally, and the larvae or nymphs show many features in common with the adults, as in orders which include Grasshoppers, Cockroaches, Earwigs, May-flies, Dragon-flies and Plant Bugs. The second division, or Endopterygota, includes insects in which, after the egg stage, their wings develop internally. Here the larvae differ very considerably from the adults, as in the orders which include Lace-wings, Caddis-flies, Butterflies, Moths, Beetles, Ants, Bees, Wasps, Flies and Fleas.

The increase in size of insects can only take place during the larval stage. The special feature of growth centres around the phenomenon of moulting, or casting off its outer skin. Only one order of insects moults after attaining sexual maturity and when all growth has ceased, and that is the Collembola, or Spring-tails. The number of moults in larvae or nymphs is usually consistent, although the number varies considerably between different species; for example in Diptera, there are only three and in Plecoptera or Stone-flies more than thirty.

One interesting variation in the normal change from larva to imago is found in the May-flies. The winged fly which emerges from the nymphal skin and is capable of flight, is not the real adult, but a sub-imago, and it remains in this condition for some few hours before casting off its delicate cuticle and not until then does it become a fully-developed May-fly, ready for its brief life.

Aquatic larvae which are able to live under low oxygen concentration conditions, are those of Chironomids, or blood worms, whose colour is due to haemoglobin in their blood. They are among the very few insects which possess this pigment. Normally insects' blood is yellow or greenish in colour.

The Glass or Phanon larvae of the Phantom Midges are truly remarkable, in that they are capable of remaining poised motionless in the water for long periods of time, and consequently are extremely difficult to see. Their ability to remain in a horizontal position at various depths in the water, and then with a sudden flick of their body vanish only to reappear a short distance away, is due to the possession of two air-sacs situated one at either end of their body, and by inflation or deflation, the bouyancy of the larvae can be adjusted to maintain its equilibrium.

Many larvae lead a parasitic existence, totally dependent upon their host for board and lodging. Some insects are not only parasitic in their larval stage, but throughout their whole life. The beautiful metallic Blue-bottle (*Protocalliphora azurea*), as a free-living adult feeds on nectar, but as a larva lives by sucking the blood of nestling birds. The Persuasive Burglar (*Rhyssa persuasoria*), the largest of our ichneumons, as a larva lives within the body of the caterpillar of the Giant-tailed Wood Wasp (*Sirex gigas*). There are also the periodical parasites, which only attack the host at intervals to feed, such as Mosquitoes, and the accidental parasites, such as the maggots of many flies which are accidentally swallowed by feeding animals and birds, and which may live upon the body tissues of the host, although it is not their normal method of existence. There are also facultative parasites, for example certain fly larvae which normally live as saprophytes on dead or decaying matter, but will resort to parasitism when the circumstances are favourable. Then brood parasites, which include insects whose young are left to the care of a different species to feed and rear. A perfect example of this is the Large Blue Butterfly (*Maculinea arion*), whose life history is so wonderful that I will describe it in a little greater detail later. Finally there are the clepto-parasites—for example the Flesh-flies which steal prey from another insect in which to spend some of their life history.

By far the greatest number of parasites among insects are to be found in the orders Diptera and Hymemptera. In the latter we find the true Ichneumons, Braconids and Chalcids. Many of the ichneumon females are fertilized in the autumn, after which the males die off, the females laying their eggs in the spring. Usually they deposit their eggs in young caterpillars, and upon hatching these larvae develop internally, and subsequently may pupate within the skin of the caterpillar which then fails to complete its growth, or they may remain until the host has pupated, or again in some cases they may even make their escape as a larva and pupate externally. One of the commonest ichneumons is *Apanteles glomeratus*, a parasite of the Large White Butterfly (*Pieris brassicae*).

The female Cluster-fly (*Pollenia rudis*), lays her eggs in autumn in the ground, and upon hatching, the larvae search out and enter an earthworm. Here they hibernate until spring, then they move along the host's body—first in one direction then in the other until little of the worm is left—then pupate.

Before leaving the parasites, I must just mention briefly the gall-dwellers. Firstly the galls are not made by the gall causers themselves, but are entirely vegetable growths, brought about by the presence of the causer. Inside these galls we may find a truly mixed community, for not all gall-flies have a gall of their own, and may spend their early lives in the galls of other species, either preying directly upon the larvae or pupae of the rightful owner, or perhaps living inside as an uninvited guest, only taking food and not injuring the owner of the gall. Then

some of the occupants are attacked by parasites, which in turn receive the attention of hyperparasites. We may find predators inside which devour one insect after another. Thus a single gall can contain a wealth of life and activity, all engaged upon the ever present struggle for the reproduction of their kind.

The Gall Wasp (*Biorhiza pallida*), which causes the familiar rose-tinted Oak-apple, has winged males, but wingless females, which after mating crawl down the tree trunk into the soil to the roots and here lay their eggs forming small galls. These eggs result in females only, which then make their way up to the branches again and lay their eggs in the terminal buds. Here the Oak-apples form once more to produce the bisexual generation, thus starting the life-cycle once again. This is an example of the cyclic phase of parthenogenesis. The Gall Wasp (*Cynips kolleri*), which casues the hard brown Marble Gall, has never been known to produce any males and is an example of the constant phase of parthenogenesis.

Finally, I could not close my address on insect reproduction without mentioning the example of brood parasitism, which to my mind is one of the most fascinating stories in the life history of any insect. It is the story of the development of that beautiful but very local butterfly, the Large Blue (*Maculinea arion*). For many years it life history remained a complete mystery, until F. W. Frohawk made the remarkable discovery of its association with ants. The female lays her eggs in June on the buds of Wild Thyme. The larvae hatch after about ten days and feed on the flowers for about three weeks during the first three moults. However, after the second moult, a honey gland develops on the 10th segment and exudes minute drops of clear saccharine fluid, which is most attractive to ants. After the third moult, the larvae become restless, leave the Thyme, and start wandering aimlessly about without eating. After some time it will perhaps meet a foraging ant, which immediately becomes interested in it, and starts drinking the little droplets of sweet secretion from the caterpillar's back. The larva then assumes an extraordinary attitude—bunching up its abdomenal segments, and at this moment the ant seizes it in its jaws and carries it off to its nest, then down into one of the underground chambers. Here it remains until the following June. For the first six weeks of its life in this darkness it feeds up rapidly upon the young larvae of the ants, who do not object to this behaviour. They seem to accept it in exchange for the honey secretions of the caterpillar. By this time it is a fat white grub which settles down to hibernate in one of the cavities with the ant larvae. Next spring it commences to feed again upon the ant larvae until its growth is complete. In May it pupates, hanging from the roof of the cavity and dropping to the floor in a few days' time. Here it remains among the ants for a further three weeks until the perfect insect emerges, and crawls with its crumpled wings, unmolested by the ants, into the outside world, where it rests in the sun allowing its wings to expand, and start its amazing story all over again.

Bibliography

BASTIN, HAROLD *Freaks and Marvels of Insect Life.* Hutchinson, London 1954.

BURR, MALCOLM *British Grasshoppers and their Allies.* Nesbit, London 1936.

The Insect Legion. London 1939.

CARPENTER, GEORGE H. *Insect Transformations.* Methuen, London 1921.

CHEESEMAN, EVELYN *Insects Indomitable.* Bell, London 1952.

CLEGG, JOHN *The Freshwater Life of the British Isles.* Warne, London 1952.

COLYER, CHARLES N. & HAMMOND, CYRIL O. *Flies of the British Isles.* Warne, London 1951.

CRYSTAL, R. NEIL *Insects of the British Woodland.* Warne, London 1937.

FORD, E. B. *Butterflies*—New Naturalist Series, No. 1. Collins, London 1945.

HARRIS, J. R. *An Anglers Entomology*—New Naturalists Series, No. 23. Collins, London 1952.

IMMS, A. D. *A General Textbook of Entomology.* Fifth edition. Methuen, London 1942.

Insect Natural History—New Naturalist Series, No. 8. Collins, London 1947.

Outlines of Entomology. Methuen, London 1942.

MECAN, T. T. & WORTHINGTON, E. B. *Life in Lakes and Rivers*—New Naturalists Series, No. 15. Collins, London 1951.

MIALL, L. C. *Injurious and Useful Insects, an Introduction to the Study of Economic Entomology.* Bell, London 1911.

PYCRAFT, W. P. *The Courtship of Animals.* Hutchinson, London n.d.

ROTHCHILD, M. & CLAY, T. *Fleas, Flukes and Cuckoos.* New Naturalists Series, No. 7. Collins, London 1952.

STEP, EDWARD *Bees, Wasps, Ants and Allied Insects of the British Isles.* Warne, London 1932.

REPORT OF THE HONORARY GENERAL SECRETARY 1961

Seventy-five members were present at the Annual General Meeting held in Lincoln on March 11th, 1961. Mr. G. A. T. Jeffs presided. One of the more important functions of this meeting was to present Mr. F. T. Baker with a token in recognition of his service to the Union over the past twenty-seven years. The presentation, on behalf of the members, was made by Mr. A. Roebuck, a past-President. Mr. Baker's resignation from the post of Hon. Secretary and Treasurer

has not, however, meant that he has slipped into the background. Once again we owe an excellent *Transactions* to his editorial activities, and his willingness to continue with this work will mean his continued presence on the Executive Committee.

Following the retirement of Mr. Baker a re-organisation of the Union's administration was necessitated. The Executive Committee's recommendations were approved by the meeting, and the following elections made: Mr. F. T. Baker was elected President for 1961-2, and it was agreed that Professor W. D. Evans of Nottingham University be invited to accept the office of President-elect. Mr. Mark R. D. Seaward and Mrs. D. J. Adams were elected Hon. General Secretary and Hon. Membership Secretary-Treasurer respectively. Mr. B. C. James and Mr. P. E. Gipps were re-appointed Hon. Field Secretaries, and Mr. R. Withers was re-elected Hon. Auditor. The Sectional Officers were re-elected *en bloc*, but the resignation of Mr. D. H. Ball was noted with regret. Officers for the Junior Section were appointed as follows: Mr. E. V. Wray (Secretary); Mr. Alan J. Gray (Assistant Secretary); Mr. G. S. Seal (Field Secretary); Mr. S. J. Houghton (Assistant Field Secretary); Miss E. J. Gibbons, Miss M. N. Tyson, Mrs. L. Watkinson, Robert L. Suggitt and Miss Stephanie J. Monk (Committee Members). The following six representatives were elected to serve on the Council of the Lincolnshire Naturalists' Trust for 1961-2: Professor C. G. C. Chesters, Mr. L. Watkinson, Mr. R. K. Cornwallis, Miss E. J. Gibbons, Mr. A. D. Townsend and Dr. R. Hull. It was further agreed that when Dr. R. Hull left the County his place should be taken by the newly-elected Hon. General Secretary. Mr. E. I. Abell was appointed as representative on the Lindsey and Holland Rural Community Council; Miss E. J. Gibbons on the Wild Plant Conservation Board; Mr. A. E. Smith on the Council for the Preservation of Rural England—Lincolnshire Branch, and Mr. Mark R. D. Seaward on the Council for Nature. The Executive Committee for 1961-2 should be composed of the Officers *ex-officio*, two members of the Junior Section and Miss E. J. Gibbons, Mr. R. K. Cornwallis and Mr. G. A. T. Jeffs. It was unanimously agreed that the subscription to the Council for Nature be increased in the next financial year to £5. It was further agreed that a student membership to the Union be instituted for those over 18 years of age who could supply satisfactory evidence that they had reduced means by reason of undertaking full-time study at a university or college. The President delivered his address on "The Natural History of Insect Reproduction". Mr. G. A. T. Jeffs was thanked by Mr. F. T. Baker for his address and for the work he had done for the Union during an unusually busy year.

Six field meetings were held during the year, and I should like to make mention here of the tremendous success of the Fungus Foray. Much of this success is due to the work of Miss G. M. Waterhouse, and we are indeed fortunate to have her interest. Her election to the position of President of the British Mycological Society has added

much to the prowess of the Union. Two joint meetings with the Lincolnshire Naturalists' Trust have also been held. The first of these was given by Mr. Clifford Smith, Hon. Secretary of the Yorkshire Naturalists' Union, who gave an illustrated lecture on the "Yorkshire Nature Reserves". The second of these lectures was of a similar nature, and was given by one of our own members, Mr. H. J. Houghton. This lecture too was well illustrated, and was entitled "The Natural History of Scotton and Laughton Commons".

The Sectional Officers' Meeting was held on November 18th. All aspects of local natural history were represented, and it was pleasing to note the increasing interest in the more neglected branches, such as Arachnology, Bryology and Lichenology. A series of public guide lectures entitled "Your Museum" was initiated by the Director, Mr. F. T. Baker, who gave the introductory talk on the place and function of the Museum. The Natural History aspect of the Museum was covered by the Hon. General Secretary of the Union. May I stress the importance of records and preserved material, and recommend the use of the local Museum and Library facilities for future work.

The Union suffered a great loss during the year by the death of Mr. R. Wood Powell, L.D.S. Mr. Powell became a member in 1919 immediately after the end of World War 1. He had earlier been a keen naturalist and owed much to training in the field with the Rev. F. L. Blathwayt who was then Rector of Doddington. Like Blathwayt his interests were in vertebrate zoology. Mr. Powell will always be remembered for his readiness to help and encourage the younger members. When it came to his turn to occupy the Presidential Chair in 1940-1 he was delighted to see a Junior Membership established. Nature Conservation was another of his great interests and he took an active share in the work of the Nature Reserves and Wild Life Committee formed in 1947 and became a founder-member of the Council of the Lincolnshire Naturalists' Trust which was formed in 1948. Mr. Powell's wise leadership and his constant encouragement to younger naturalists will long be remembered by our members.

REPORT OF THE HONORARY MEMBERSHIP SECRETARY AND TREASURER 1961

Membership shows a slight decrease this year, although there has been an increase in the number of new members, this is due to the number of deletions. With the ever increasing costs of organisation, particularly postage, it is impossible to keep names on the list when subscriptions have lapsed.

Honorary Life Member	1	
Life Members	24	
Ordinary Members	282	430
Junior Members	106	
Institutional Members	17	

DELETIONS. Life Members, 1; Ordinary Members, 53; Junior Members, 49; Institutional Members, 3—Total, 106.

The following members have been elected during 1961:

ORDINARY MEMBERS

Allerton, C. J., School House, Wigtoft, Boston.
Atkin, K., 34 Bassingham Crescent, Lincoln.
Bates, S. S., 8 South Parade, Boston.
Bowser, R. E., Tytton Hall, Boston.
Carter-White, Miss M., The Grove, Ramsgate Road, Louth.
Church, G. A., B.SC., A.C.G.I., M.I.MECH.E., The Technical College, Lincoln.
Cliffe, Mrs. H., 29 Broadway, Lincoln.
Clipsham, B. H., 97 Rasen Lane, Lincoln.
Crane, T. P. R., Orchard House, Willingham-by-Stow.
Credland, A., 9 Ings Lane, Patrington, E. Yorks.
Eite, J. R., 5 Willow Tree Gardens, Lincoln.
Gill, D. B., 64 Elliston Street, Cleethorpes.
Lavington, S., 34 Vernon Street, Lincoln.
Lewis, J. B., B.A., 18 Wragby Road, Scunthorpe.
Lewis, Mrs. J. B., 18 Wragby Road, Scunthorpe.
Newsum, G. H., 17 Mainwaring Road, Lincoln.
Peet, W. M., 17 Ashfield Street, Sleaford.
Redshaw, E. J., Rowanhill, Fennel Road, Pinchbeck, Spalding.
Sharpe, J. W. N., Saranac, Red Hall Farm Lane, Bracebridge Heath, Lincoln.
Sharpe, Mrs. J. W. N., Saranac, Red Hall Farm Lane, Bracebridge Heath, Lincoln.
Stafford, Mrs. E., 69 Longdales Road, Lincoln.
Starkey, Miss H. M., 61 Yarborough Crescent, Lincoln.
Starkey, Miss P., 61 Yarborough Crescent, Lincoln.
Weston, Mrs. I., B.SC., 4 Riseholme Lane, Riseholme, Lincoln.
Wilson, K. E., Vega, Peaks Lane, New Waltham, Grimsby.

INSTITUTIONAL MEMBER

The Natural History Society, The Grammar School, Brigg.

JUNIOR MEMBERS

Boulton, Miss A. E., 77 Dugard Road, Cleethorpes.
Clayton, R., 25 Humberston Avenue, New Waltham, Grimsby.
Cook, Miss S. L., 118 Taylors Avenue, Cleethorpes.
Crooks, J., 314 Burgh Road, Skegness.
Fainlight, H. M., 14 Lumley Crescent, Skegness.
Firth, J. F., 4 Bailden Crescent, Lincoln.
Ford, Miss R., 18 Ancaster Close, Cherry Willingham.
Hollingworth, W., 12 Conyers Avenue, Grimsby.
Holman, R., 2 Burlington Road, Skegness.
Kermode, R. C., 6 Moorland Avenue, Lincoln.

Lewis, Miss R., 18 Wragby Road, Scunthorpe.
Lewis, Miss S., 18 Wragby Road, Scunthorpe.
Lorand, R., 67 Bradford Avenue, Cleethorpes.
Marsh, M., 32 Kingsway, Cleethorpes.
Meanwell, M. P., 28 Gunby Avenue, Lincoln.
Middleton, Miss K. L., 61 Browning Drive, Lincoln.
Norris, Miss D. M., 120 Church Lane, Scunthorpe.
Smith, B. N., 2 Beacon Way, Skegness.
Stafford, Miss M., 69 Longdales Road, Lincoln.
Sykes, A., 16 Morris Gardens, Skegness.
Sykes, C. D., 30 Tarran Way, Skegness.
Ware, P. W., 19 Gunby Avenue, Lincoln.
Whatmough, Miss A., 8 St. Catherines Road, Lincoln.

REPORT OF HON. FIELD SECRETARIES, 1961

Six field meetings were held during 1961 and again the weather was kind to us and rubber boots and mackintoshes did not have to put in an appearance on any occasion.

The May meeting was an innovation for recent years as it was held during the week instead of Saturday and in the evening. About 30 members met at Riseholme Farm Institute and were shown round by two of the Institute staff Messrs. Beechey and Wilson. Members saw the greenhouses, the orchards, soft fruit plantations and the routine of the seasonal activities was explained in each case. Members were also shown the method of egg examination and visited the crew yards and milking parlour.

The June meeting was held at Tumby, Sir David Hawley's estate. Members were able to visit Troy Wood where the heronry is situated, and were fortunate to have Mr. G. R. Porter who has kept the heronry under observation for many years. Mr. Porter said that 52 nests were occupied this season which, although a slight decline on previous years, still constituted the biggest heronry in the area. Mr. G. A. T. Jeffs, giving the entomological report, pointed out that the wood ants in Tumby Wood were dominant to such an extent that no caterpillars could be found at all. He also reported having seen Green-veined White and Large Skipper butterflies and Map-winged Swift and Broken-barred Carpet moths. Mr. H. J. Houghton reporting on the fungi had found Silver Tuft and Birch Polypore also numerous Stinkhorns which were early.

Gibraltar Point was the place for the July meeting. Mr. A. E. Smith gave members a preliminary talk in the Coastguard House, giving the history of Gibraltar Point and the reserve. After lunch Mr. Smith arranged a conducted tour of the reserve pointing out the varied fauna and flora and explained how the sand dunes were formed. Mr. E. H. Clifton and Mr. A. D. Townsend trapped some birds in the Heligoland Trap and demonstrated the method of ringing and recording.

Haverholme Priory was re-visited for the August meeting which was ably led by Miss E. Hall of Sleaford. There was a good turn out of members and the weather was again very obliging. Members split up into two parties, one, with Miss Gibbons and Miss Hall, concentrated on botany and the others were taken by Mr. Dennis, keeper for birds. The botanical party found Purple Loosestrife, and five different coloured Comfrey, also found were: St. John's wort, Hairy St. John's wort, Water plantain and—an uncommon find—Water Dropwort. Birds seen were: Heron, Kingfisher, Marsh and Long-tailed Tit, Bull-finch, Goldfinch and a late moorhen's nest with three eggs. Mr. G. S. Dixon gave members a short history of Haverholme Priory.

The location of the September meeting was further south in the county at Tydd St. Mary. Miss Gibbons arranged and led the meeting. Among plants found were: Duke of Argyll's tea tree, Ladies Tresses, Carline and Musk thistle, Sea Aster, Sea Spurry, Sea Plantain, and again Water Dropwort. Mr. E. H. Clifton took a party to the salt marsh to look for birds. Not very many species were seen but a good view of a Spotted Redshank made up for a lot. Other birds seen were: Common Redshank, Dunlin, Curlew, Ringed Plover, Shelduck and Heron.

The October meeting—the Fungus foray—was as usual led by Miss G. M. Waterhouse. This was the first occasion that the Union has been led by the President of the British Mycological Society to which high office Miss Waterhouse was elected for 1961. The meeting was held at Doddington, near Lincoln. Again it was a most successful day in warm weather and over 70 different species of fungi were collected and identified by Miss Waterhouse.

The Field Secretaries wish to express their gratitude to all landowners who have so willingly co-operated to make these field meetings so enjoyable for all members.

JUNIOR SECTION

Hon. General Secretary's Report, 1961

From a general secretary's point of view the year 1961 can be best described as a satisfactory one for our Junior Section. A good number of new individual members joined us during the year, but this had been offset by a number of transfers to the adult section, movement of members from the county and a general overhaul of membership by our membership secretary/treasurer. Group membership on the other hand had remained steady, but it is sad to report that some affiliated societies and clubs had met with serious difficulties due to staff changes and losses in schools.

The year's programme of field and indoor meetings, summer school and natural history competitions had been a full and varied one, providing something for everybody's taste, and the experiment of

holding joint meetings with such kindred societies as the Scunthorpe Museum Club had proved most successful.

The Exhibition Meeting has excelled itself due to the splendid facilities so kindly afforded us in the new building of the Lincoln Technical College. It was, however, most unfortunate that bad weather conditions seriously affected attendance, a situation which we hope to avoid in the future by moving this meeting to the spring of the year.

Three newsletters and two nature leaflets were issued during the year and an Advisory Panel had been set up to assist junior members and affiliated societies and clubs in several specialised branches of natural history.

In conclusion, I would like to thank all those who helped us in any way during the course of the year, and in particular our hard-working officers and committee. The work of the general secretary has increased at least four-fold during the past three years, a fact which not only indicates the growth of our junior section, but also reflects the real interest and help we receive from an increasing number of very valued friends.

COMPETITION AWARDS FOR 1961

JUNIOR COMPETITIONS

Plaster Cast

Commended Certificate: Margaret Scott, Louth; Andrew Sykes, Skegness.
Judge: Mrs. J. S. Ruddock, Louth.

Nature Diary

Prize: Andrew Sykes, Skegness.
Judge: Mrs. B. Watkinson, Cleethorpes.

SENIOR COMPETITIONS

Photograph

Prize: Geoffrey Ballans, Waltham.
Highly Commended Certificate: John Davie, Cleethorpes.
Commended Certificate: Michael Levack, Cleethorpes.
Judge: Mr. J. S. Houghton, Gainsborough.

Natural History Study

Prize: Stephanie Monk, Woodhall Spa.
Highly Commended Certificate: Robert Suggitt, Cleethorpes.
Commended Certificate: Michael Levack, Cleethorpes.
Judge: Mr. A. J. Gray, Tetney.

Plant Specimens

Prize: Stephanie Monk, Woodhall Spa.
Highly Commended Certificate: Philip Pedley, Broughton.
Commended Certificate: Rosemary Ford, Cherry Willingham.
Judge: Miss E. J. Gibbons, Holton-le-Moor.

OPEN COMPETITION

Natural History Illustration

Equal First Prize: Peter Homes, Cleethorpes; Ian Harris, Cleethorpes.
Equal Second Prize: Robert Braithwaite, Cleethorpes; Robert Suggitt, Cleethorpes.
Equal Third Prize: Paul Harris, Cleethorpes; Andrew Sykes, Skegness.
Highly Commended Certificate: Ronald Boys, Healing; Brian Cole, Waltham; John Davie, Cleethorpes; David Stamp, Cleethorpes.
Commended Certificate: B. J. Adams, Cleethorpes; Keith McKinlay, Cleethorpes; Stephanie Monk, Woodhall Spa.
Special Prize: Shirley Derry, Lincoln; Philip Pedley, Broughton.
Judge: Mr. G. H. Seal, Willingham-by-Stow.

AFFILIATED SOCIETY/CLUB COMPETITION

Illustrated Booklet of Natural History Activities

Affiliated Society/Club Shield: Avocet Natural History Society, Cleethorpes.
Judge: Mr. F. T. Baker, Lincoln.

Junior Silver Cup

Andrew Sykes, Skegness.

Senior Silver Cup

Stephanie Monk, Woodhall Spa (for second year).

Hon. Field Secretary's Report, 1961

A number of successful activities were carried out in 1961.

The year had a splendid start on April 8th at Holton-le-Moor, where demonstrations and displays gave practical assistance on a wide field of subjects. About 40 people saw collections of pressed flowers, botanical paintings, lepidoptera, palaeontology, plaster casts, leaf prints and photographs. Mounted natural history specimens were exhibited and explained by Mr. Watkinson and Mr. Houghton showed and explained beautiful films of fungi. This gathering of expert techniques was of great help to the young people who were lucky enough to be present.

On May 13th a large party visited the Scunthorpe area going down an ironstone mine and exploring Risby Warren, under the leadership of Mr. David Spalding. The near Breckland flora of parts of the Warren, the great geological and archaeological interest and good bird population made a profitable afternoon.

The summer school from August 22nd to 25th was the usual enormous success with the usual strong complaint that the course was far

too short. Eight members studied a wide field of subjects and were able to get a new approach to their own studies for a later use. The lecturers were Mr. A. E. Smith, Miss E. J. Gibbons, Mr. Alan Gray and Mrs. Betty Watkinson, to whom we owe many thanks but all of whom are happy to be able to make a contribution to the development of young naturalists. Mr. Wray and Mr. Coultas were most helpful in the running of the school. A grant of £10 from the Lindsey Education Authority is gratefully acknowledged and meant that each student was able to study and eat for four days for a total cost of thirty shillings. The Naturalist Trust has promised to help make this school a regular feature. Its value cannot be over-estimated.

The Cleethorpes and District Field Naturalists Society entertained 25 members at Low Farm and Tetney Marshes on September 23rd. The techniques of mist netting and decoy work were demonstrated and the system of ringing and recording were patiently and clearly explained. The section is very grateful to the Society's members who were so kind and helpful to the younger ornithologists.

The final meeting with the seniors for the annual Fungus foray at Doddington was preceded by an explanatory session in Lincoln at which Miss Waterhouse, President of the British Mycological Society, gave individual attention to those young juniors who took advantage of her learning and her willingness to teach. The enormous interest in this session and the extent of knowledge of many juniors, surprised many people including the writer of this report.

A number of specialist ventures have been encouraged. Mr. Mark Seaward had 18 members doing field work on mosses during the year and the Scunthorpe Junior Naturalist Group began a long term botanical and general survey of Scotton Common Nature Reserve.

Distance in this large county is the greatest enemy of those who wish to get the Juniors together and clearly some sort of district activities must be developed as an answer to the problem.

BOTANY

Miss E. J. Gibbons

The following are brief notes on the Field Meetings.

Tumby Chase (div. 10)—an important locality, at one time the property of Sir Joseph Banks. In St. Helen's Wood on the edge of the fens, the soil is principally peat over gravel. Large oaks, many ferns of various kinds, Lilies of the Valley in profusion, Climbing Corydalis and distinctive grasses are the chief vegetation. Near the road the soil is stronger, and Dog's Mercury, Guelder Rose and Dogwood were found.

Gibraltar Point (div. 11)—members sheltered from the thunderstorm in the newly furnished Field Research Station, formerly the Coastguard Station. After it cleared up Mr. A. E. Smith took members

to see special plants including Sea Bindweed (*Calystegia soldanella*) and Sea Campion (*Silene maritima*). The Sea Lavender was at its best.

Haverholme (div. 14)—the botanists first visited the water plants in the New River Slea and then walked as far as time permitted through the woods to the Willow Fen. Purple and Yellow Loosestrife and Skullcap were seen in flower. Meadow Rue was in fruit. In the River Slea two kinds of Water Plantain (*Alisma plantago-aquatica* and *lanceolata*), Floating Water Dropwort (*Oenanthe fluitans*) and Brookweed (*Samolus valerandi*) were in flower and several Pondweeds.

Tydd Gowt (div. 18)—at the extreme south-east of Lincolnshire proved to be a most interesting spot. Steep gravel banks of the Gowt or Gote, which were formerly partly in Cambridgeshire, produced Lady's Tresses (*Spiranthes spiralis*), Carline Thistle (*Carlina vulgaris*), Spiny Restharrow (*Ononis spinosa*) and Hairy Rockcress (*Arabis hirsuta*). The saltmarsh on the bank of the River Nene was full of sea plants including Slender Hare's-ear (*Bupleurum tenuissimum*), Sea Lavender, Strawberry Clover, Sea Aster and Sea Wormwood (*Artemisia maritima*).

Doddington (div. 13)—Cinder Plot Wood with its birch and bracken had a few interesting plants as well as fungi. One tree of Alder Buckthorn (*Frangula alnus*) was seen, also Eared Willow (*Salix aurita*). Long Plantation was also visited where Canon R. E. G. Cole noted that the Foxgloves had been introduced during the last century. Rhododendrons were also abundant.

The Junior Section visited Risby Warren (div. 2) in May and studied a most interesting area of blown sand over limestone in a very arid exposed position. On the western slopes are pockets of clay with a marsh flora including Meadow Rue, Marsh Cinquefoil, Marsh Violet and Purple Smallreed. On the east the ground falls more gradually and has Heather (*Calluna*) and limestone plants including Purple Milkvetch (*Astragalus danicus*), Carline Thistle, Vipers Bugloss and small sandplants.

Tetney Marsh (div. 9) was visited by the Juniors in September when the saltmarsh and dykes were searched. Lesser Water Plantain (*Baldellia ranunculoides*), Lesser Reedmace, Brookweed, Celery and Water Dropwort were found.

The following new records have been added to the County flora during the past year:

County Records:

166/1	*Linum bienne*	9	J.A.L.
	,, ,,	16	J.H.C.
	,, ,,	18	M.N.R. and J.G.
503/2	**Galinsoga ciliata*	16	J.H.C.
560/3	*Taraxacum spectabile*	15	J.H.C.
714/2	*Parapholis incurva*	11	M. S., 1960

Vice-county Records:

702/1	*Apera spica venti*	16	R.B.H., 1957
663/23	*Carex strigosa*	16	J.H.C. and J.G.

Divisional Records:

19/1	**Cystopteris fragilis*	11	J.G.
27/1	**Azolla filiculoides*	16	D.O.S.
58/3	*Papaver lecoqii*	8 and 10	M.N.R.
88/5	**Cochlearia danica*	13 and 7	J.G. (railway)
88/6	*Cochlearia anglica*	3	J.G.
131/10	**Cerastium atrovirens*	7 and 13	J.G. (railway)
137/4	**Minuartia hybrida*	10	J.G. (railway)
		15	J.G. (native)
154/9	*Chenopodium ficifolium*	12 and 13	J.G.
		18	J.H.C.
168/3	**Geranium endressii*	10	J.B.
171/4	**Impatiens glandulifera*	13	W.L.Y.
190/6	**Medicago arabica*	11	A.L.
193/1	*Anthyllis vulneraria*	18	J.G.
204/1	*Hippocrepis comosa*	10	K.G. and J.G. (R.A. Smith, 1959)
205/1	*Onobrychis sativa*	18	J.G.
254/6	*Epilobium adnatum*	11	S.M.W.
286/1	**Petroselinum crispum*	4	J.G.
318/2	*Mercurialis annua*	18	M.N.R.
392/6	*Symphytum tuberosum*	2	D.McC. and J.G.
403/2	**Echium lycopsis*	3	R.P.
415/1	**Datura stramonium*	17	C.J.A.
442/4	*Utricularia minor*	13	E.H.C.
537/1	*Carlina vulgaris*	11	A.S.
540/1	*Cirsium eriophorum*	7	G.P.
598/1	*Ornithogalum umbellatum*	18	J.G.
627/1	*Spiranthes spiralis*	18	L.N.U.
654/4	*Eriophorum vaginatum*	3	S.W.P.
656/2	*Eleocharis acicularis*	7	J.G.
656/6	*Eleocharis uniglumis*	11	S.M.W.
658/1	**Cyperus longus*	15	J.G.
663/16	*Carex rostrata*	10	M.N.R.
		11	J.G.
663/22	*Carex pendula*	7	W.H. and M.N.R.
672/3	*Vulpia myuros*	6	W.H. and J.G.
700/2	*Calamagrostis canescens*	5 and 7	J.G.

* Alien species—not native in this habitat.

Recorders:

C.J.A.	—	C. J. Allerton	D.McC.	—	D. McClintock
J.B.	—	J. Bell	R.P.	—	R. Parker
E.H.C.	—	E. H. Clifton	S.W.P.	—	S. W. Parker
J.H.C.	—	J. H. Chandler	G.P.	—	G. L. A. Posnett
J.G.	—	Miss E. J. Gibbons	M.N.R.	—	Miss M. N. Read
K.G.	—	Mrs. K. Gipps.	A.S.	—	A. Sykes
R/B.H.	—	Mr. and Mrs. Howitt	M.S.	—	Mrs. M. Smith
W.H.	—	Miss W. Heath	D/O.S.	—	Mr. and Mrs. Stollery
J.A.L.	—	J. A. Lowe	S.M.W.	—	Dr. S. Max Walters
A.L.	—	A. Lodge	W.L.Y.	—	W. L. Young

BRYOLOGY

MARK R. D. SEAWARD, B.SC.

Expansion of the Lincolnshire Bryophyte Herbarium at the City and County Museum, Lincoln has continued during the past year. Publicity to this venture was made on a national level by a short article which appeared in the *Transactions* of the British Bryological Society (1961, **4**, p. 131). Interest on a local level has continued, and I should like to express my thanks for the collections made by Miss W. Heath, Mrs. O. V. Spurrier, Miss E. J. Gibbons, Mr. E. J. Redshaw, Mr. G. A. Chapman and Mr. H. J. Houghton.

An article entitled "Lincolnshire Bryology" appeared in *The Naturalist* (Seaward, 1961, pp. 41-43), and numerous enquiries from outside the County have been dealt with as a result of this and previous publications.

A further collection has been added to the Herbarium—that of the late Mr. A. Bullock, who worked with Mr. G. H. Allison in the Grimsby district about 1909-1920. The collection was kindly donated to the Union by his son, Mr. A. A. Bullock, who is at present working at Kew.

Preparations are being made now for the printing of a duplicated "Check-list of Lincolnshire Mosses". Work has also begun on a Liverwort Flora. No Lincolnshire liverwort records have been published since Miss S. C. Stow's list in the 1906 *L.N.U. Transactions*. Numerous vice-county and divisional records based on material in the Lincolnshire Herbarium and data gleaned from manuscripts and *Brit. Bryol. Soc. Reports* are tabulated after the moss records below.

Moss Records up to the end of 1961

Once again I should like to acknowledge Mrs. J. Appleyard, Miss E. M. Lobley, Mr. R. D. Fitzgerald, Mr. S. W. Greene, Dr. M. C. F. Proctor, Mr. F. A. Sowter, Dr. J. H. Tallis, Mr. E. C. Wallace and Dr. E. F. Warburg for their help in this direction.

Vice-county Record:

69/1 *Tetraphis pellucida* Hedw.
V.C.53. Harmston, March 1959, M. Seaward.

Divisional Records:

1/9 *Sphagnum squarrosum* Pers. ex Crome
div. 13. Doddington Woods, Oct. 1961, M. Seaward.

1/19.d *Sphagnum subsecundum* Nees var. *auriculatum* (Schp.) Lindb. emend Aberg
div. 7. Linwood Warren, March 1960, M. Seaward.

1/20 *Sphagnum fimbriatum* Wils.
div. 7. Middle Rasen, Aug. 1961, Miss E. J. Gibbons.

5/6 *Polytrichum piliferum* Hedw.
div. 1. Sandy soil, Isle of Axholme, April 1961, H. J. Houghton.
div. 2. Sandy heath, Scunthorpe (44/878125), Aug. 1953, C. N. Twydell.
div. 3. Caistor, April 1914, G. H. Allison.
div. 15. Sand-pit, Lincs. Gate Reserve, nr. Holywell (53/001148), Nov. 1961, J. H. Chandler.

5/11 *Polytrichum commune* Hedw.
div. 15. Woolsthorpe, Sept. 1959, Miss E. J. Gibbons.

8/11 *Fissidens exilis* Hedw.
div. 1. Crowle, April, 1961, G. A. Chapman.

8/15 *Fissidens adianthoides* Hedw.
div 4. Chalk-quarry, Hatcliffe, April 1916, A. Bullock.

15/1 *Ceratodon purpureus* (Hedw.) Brid.
div. 17. Pinchbeck, March 1961, E. J. Redshaw.

22/9 *Dicranella heteromalla* (Hedw.) Schp.
div. 1. Isle of Axholme, April, 1961 H. J. Houghton.
div. 18. Tydd St. Mary, Sept. 1961, M. Seaward.

35/1 *Tortula ruralis* (Hedw.) Crome
div. 2. Scawby, Feb. 1961, M. Seaward.
div. 5. Scotton, Aug. 1959, M. Seaward.
div. 17. Pinchbeck, March 1961, E. J. Redshaw.
div. 18. Cowbit Wash, April 1961, E. J. Redshaw.

35/4 *Tortula intermedia* (Brid.) Berk.
div. 18 Tydd St. Mary, Sept. 1961, M. Seaward.

35/11 *Tortula muralis* Hedw.
div. 5. Gainsborough, Feb. 1961, M. Seaward.

40/4 *Pottia intermedia* (Turn.) Fürnr.
div. 2. Scunthorpe (44/879105), Aug. 1953, C. N. Twydell.

40/9 *Pottia davalliana* (Sm.) C. Jens.
div. 14. Rauceby, Aug. 1954, J. H. G. Peterken and E. C. Wallace.
div. 16. Edenham (53/054224), Dec. 1960, J. H. Chandler.

40/12 *Pottia bryoides* (Dicks.) Mitt.
div. 14. Sand-pit, Rauceby, Apirl 1948, F. A. Sowter.

44/2 *Barbula unguiculata* Hedw.
div. 5. Nr. Gainsborough, Feb. 1961, M. Seaward.

51/4 *Trichostomum crispulum* Bruch
div. 14. Broken grassy ground, Heydour Warren, Aug. 1954, E. C. Wallace (Brit. Bryol. Soc. Herbarium).

55/18 *Grimmia pulvinata* (Hedw.) Sm
div. 18. Spalding, Jan. 1961, J. H. Chandler.

58/1 *Funaria hygrometrica* Hedw.
div. 1. Isle of Axholme, April 1961, H. J. Houghton.
div. 5. Scotton, March 1961, H. J. Houghton.
div. 17. Surfleet (53/230285), April 1961, E. J. Redshaw.

73/4 *Pohlia nutans* (Hedw.) Lindb.
div. 1. Epworth, April 1961, M. Seaward.

77/18 *Bryum pseudotriquetrum* (Hedw.) Schwaegr.
div. 1. Crowle, April 1961, G. A. Chapman.

77/22 *Bryum caespiticium* Hedw.
div. 5. Gainsborough, Feb. 1961, M. Seaward.
div. 17. Pinchbeck, March 1961, E. J. Redshaw.
div. 18. Tydd St. Mary, Sept. 1961, M. Seaward.

77/24 *Bryum argenteum* Hedw.
div. 5. Gainsborough, Feb. 1961, M. Seaward.
div. 9. Tetney Lock, Sept. 1961, M. Seaward.
div. 17. Pinchbeck, March 1961, E. J. Redshaw.

77/27 *Bryum erythrocarpum* Schwaegr.
div. 6. Riseholme, April 1961, A. D. Townsend.

77/34 *Bryum capillare* Hedw.
div. 1. Epworth, July 1961, G. A. Chapman.
div. 5. Gainsborough, Feb. 1961, M. Seaward.
div. 18. Spalding, Jan. 1961, J. H. Chandler.

79/14 *Mnium undulatum* Hedw.
div. 5. Scotton, Aug. 1959, M. Seaward.

79/15 *Mnium punctatum* Hedw.
div. 1. Crowle, April 1961, G. A. Chapman.
div. 2. Risby Warren, May 1961 G. A. Chapman.
div. 15. Irnham, May 1961, J. H. Chandler.

81/3 *Aulacomnium androgynum* (Hedw.) Schwaegr.
div. 1. Isle of Axholme, April 1961, H. J. Houghton.
div. 2. Twigmoor, April 1961, M. Seaward.
div. 5. Scotton, Aug. 1959, M. Seaward.

98/16 *Orthotrichum diaphanum* Brid.
div. 4. Wall-top, Beelsby, April, 1915, A. Bullock.
div. 16. Tarmac path, Edenham, Dec. 1960, J. H. Chandler.

100/1 *Fontinalis antipyretica* Hedw.
div. 2. Messingham, July 1961, G. A. Chapman.

126/3 *Campylium chrysophyllum* (Brid.) Bryhn
div. 5. Scotton, 1914, A. Bullock.

129/1 *Amblystegium serpens* (Hedw.) B. & S.
div. 1. Epworth, April 1961, M. Seaward.
div. 18. Spalding, Jan. 1961, J. H. Chandler.

131/1 *Drepanocladus aduncus* (Hedw.) Warnst.
div. 2. Messingham, July 1961, G. A. Chapman.

131/4.b *Drepanocladus fluitans* (Hedw.) Warnst. var. *falcatus* (B. & S.) Warnst.
div. 10. Tumby Wood, June 1961, H. J. Houghton.

131/6 *Drepanocladus revolvens* (Sm.) Warnst.
div. 2. Stream bank, Scunthorpe (44/884120), Aug. 1953, C. N. Twydell.

137/1 *Camptothecium sericeum* (Hedw.) Kindb.
div. 18. Spalding, Jan. 1961, J. H. Chandler.

137/2 *Camptothecium lutescens* (Hedw.) Brid.
div. 18. Sutton Bridge, Sept. 1961, M. Seaward.

138/1 *Brachythecium albicans* (Hedw.) B. & S.
div. 3. Sandy soil, Brigg, Feb. 1961, M. Seaward.
div. 16. Stamford, March 1961, J. H. Chandler.
div. 18. Sutton Bridge, Sept. 1961, M. Seaward.

138/10 *Brachythecium velutinum* (Hedw.) B. & S.
div. 1. Epworth, April 1961, M. Seaward.
div. 17. Swineshead, Sept. 1961, M. Seaward.
div. 18. Sutton Bridge, Sept. 1961, M. Seaward.

141/4 *Eurhynchium praelongum* (Hedw.) Hobk.
div. 9. Humberstone, May 1914, A. Bullock.
div. 17. Swineshead, Sept. 1961, M. Seaward.

141/8 *Eurhynchium riparioides* (Hedw.) Jennings
div. 1. Crowle, April 1961, G. A. Chapman.
div. 9. Humberstone, Nov. 1910, G. H. Allison.

153/1 *Hypnum cupressiforme* Hedw.
div. 18. Spalding, Jan. 1961, J. H. Chandler.

155/1 *Ctenidium molluscum* (Hedw.) Mitt.
div. 4. Irby Dale, March 1915, A. Bullock.

Nomenclature and index numbers according to Richards, P. W. and Wallace, E. C. "An Annotated List of British Mosses", *Trans. Brit. Bryol. Soc.*, appendix to vol. 1, part 4 (1950).

Liverwort records since 1906:

North Lincs. (V.C. 54):

1/1 *Anthoceros punctatus* L. (inc. *A. crispulus* (Mont.) Douin).
Laceby, Nov. 1930, G. H. Allison. *B.B.S. Report*, 1930, p. 288.

7/1 *Preissia quadrata* (Scop.) Nees
Scotton, June 1913, G. H. Allison et al.

10/8 *Riccia sorocarpa* Bisch.
Laceby, Nov. 1930, G. H. Allison. *B.B.S. Report*, 1930, p. 281.

12/3 *Riccardia sinuata* (Dicks.) Trev.
Brocklesby, April 1924, G. H. Allison and Miss A. Holderness. *B.B.S. Report*, 1925, p. 168.

20/1 *Fossombronia foveolata* Lindb.
Kirkby-on-Bain, Sept. 1934, G. H. Allison. *B.B.S. Report*, 1934, p. 221.

20/7 *Fossombronia pusilla* (L.) Dum.
Aylesby, Jan. 1927, G. H. Allison. *Trans. Brit. Bryol. Soc.*, **1**, p. 492 (1951).

27/2 *Ptilidium pulcherrimum* (Weber) Hampe
By river, Freshney, 1912, G. H. Allison. (det. D. A. Jones).
Little Coates, 1924, G. H. Allison. *B.B.S. Report*, 1924, p. 91.

31/4 *Lepidozia setacea* (Web.) Mitt.
Scotton, 1935, G. H. Allison.

33/4 *Calypogeia fissa* (L.) Raddi
Linwood, Aug. 1928, G. H. Allison.

34/6 *Lophozia excisa* (Dicks.) Dum.
Epworth, 1937, G. H. Allison. (det. H. H. Knight).

34/11 *Lophozia bicrenata* (Schmid.) Dum.
Nr. Gainsborough, Sept. 1945, E. W. Jones. *B.B.S. Report*, 1944-5, p. 288.

35/1 *Leiocolea turbinata* (Raddi) Buch
Little Coates, 1912, G. H. Allison.

36/3 *Barbilophozia attenuata* (Mart.) Loeske
Manton, 1932, G. H. Allison. *B.B.S. Report*, 1932, p. 56.

37/3 *Tritomaria exsectiformis* (Breidl.) Schiffn. (Sphenolobus exsectiformis Steph.)
Usselby, Sept. 1936, G. H. Allison. See: *Lincs. Nat. Union Trans.*, **9**, p. 111 (1936).

46 8 *Solenostoma crenulatum* (Sm.) Mitt.
Authorpe, 1931, G. H. Allison.

57 2 *Lophocolea cuspidata* (Nees) Limpr.
Ashby, 1930, Miss A. Holderness.

58 2 *Chiloscyphus pallescens* (Ehrh.) Dum.
Tumby, 1931, G. H. Allison. *B.B.S. Report*, 1931, p. 361.

62 9 *Cephaloziella starkii* (Funck) Schiffn.
Manton, March 1930, G. H. Allison.

63 5 *Cephalozia connivens* (Dicks.) Spr.
Scotter Moor, 1935, G. H. Allison. (det. E. C. Wallace).

63 7 *Cephalozia media* Lindb.
Epworth, 1948, F. Rose.

70 10 *Scapania aspera* Bernet
Heydour Warren, Aug. 1954, E. C. Wallace. *Trans. Brit. Bryol. Soc.*, **2**, p. 581 (1955).

70 15 *Scapania undulata* (L.) Dum.
Manton, 1932, G. H. Allison. *B.B.S. Report*, 1932, p. 57.

70 19 *Scapania compacta* (Roth) Dum.
Scawby Woods, Nov. 1953, Miss E. M. Lobley. *Trans. Brit. Bryol. Soc.*, **2**, p. 581 (1955).

South Lincs. (V.C. 53):

12 3 *Riccardia sinuata* (Dicks.) Trev.
Bourne, 1932, G. H. Allison.

14 4 *Pellia fabbroniana* Raddi
Floor of old quarry, nr. Heydour Warren, Aug. 1954, J.H.G. Peterken and E. C. Wallace. *Trans. Brit. Bryol. Soc.*, **2**, p. 579 (1955).

20 7 *Fossombronia pusilla* (L.) Dum.
Sleaford, 1931, G. H. Allison.

27 1 *Ptilidium ciliare* (L.) Hampe
Hartsholme, Feb. 1960, M. Seaward.

44 1 *Gymnocolea inflata* (Huds.) Dum.
Hartsholme, April 1960, M. Seaward.

57 2 *Lophocolea cuspidata* (Nees) Limpr.
Ancaster, 1949, F. Rose.

Divisional Records:

1 1 *Anthoceros punctatus* L. 11, (1932, G.H.A.)

5 1 *Conocephalum conicum* (L.) Dum. 5, (1877, F. A. Lees); 16, (1959, J.H.C.)

6 1 *Lunularia cruciata* (L.) Dum. 13, (1959, M.S.); 18, (1961, J.H.C.)

8/1 *Marchantia polymorpha* L. 17, (1961, E. J. Redshaw)

10/5 *Riccia glauca* L. 4, (1945, G.H.A.)

10/8 *Riccia sorocarpa* Bisch. 7, (1931, G.H.A.)

10/10 *Riccia fluitans* L. 4, (1912, G.H.A.); 9, (1907, F. Rhodes)

11/1 *Ricciocarpus natans* (L.) Corda 3, (1930, G.H.A.); 4, (1912, G.H.A.)

12/2 *Riccardia multifida* (L.) S. F. Gray 4, (1912, G.H.A.)

12/3 *Riccardia sinuata* (Dicks.) Trev. 4, (1945, G.H.A.)

12/6 *Riccardia pinguis* (L.) S. F. Gray 2, (1938, G.H.A.); 4, (1924, Grimsby Nat. Soc.); 9, (1912, G.H.A.)

14/1 *Pellia epiphylla* (L.) Corda 16, (1960, J.H.C.)

14/4 *Pellia fabbroniana* Raddi 3, (1961, M.S.)

15/1 *Metzgeria furcata* (L.) Dum. 4, (1912, G.H.A.); 8, (1934, G.H.A.); 9, (1912, G.H.A.); 11, (1912, G.H.A.); 16, (1959, J.H.C.)

20/7 *Fossombronia pusilla* (L.) Dum. 7, (1931, G.H.A.); 16, (1932, G.H.A.)

27/1 *Ptilidium ciliare* (L.) Hampe 2, (1961, M.S.); 5, (1948, F. Rose)

31/2 *Lepidozia reptans* (L.) Dum. 5, (1928, G.H.A.)

33/3 *Calypogeia trichomanis* (L.) Corda, emend Buch 1, (1948, F. Rose)

33/4 *Calypogeia fissa* (L.) Raddi 5, (1932, G.H.A.); 11, (1930, G.H.A.)

33/7 *Calypogeia arguta* Nees & Mont. 5, (1932, G.H.A.); 8, (1931, G.H.A.)

34/1 *Lophozia ventricosa* (Dicks.) Dum. 2, (1932, G.H.A.)

35/1 *Leiocolea turbinata* (Raddi) Buch 7, (1944, G.H.A.); 9, (1927, G.H.A.)

36/3 *Barbilophozia attenuata* (Mart.) Loeske 7, (1932, G.H.A.)

44/1 *Gymnocolea inflata* (Huds.) Dum. 1, (1939, G.H.A.); 5, (1958, F. Rose)

46/8 *Solenostoma crenulatum* (Sm.) Mitt. 1, (1939, G.H.A.); 5, (1939, G.H.A.)

57/2 *Lophocolea cuspidata* (Nees) Limpr. 7, (1960, M.S.)

57/3 *Lophocolea heterophylla* (Schrad.) Dum. 1, (1912, G.H.A.); 4, (1932, G.H.A.); 7, (1959, M.S.); 10, (1950, G.H.A.); 11, (1931, G.H.A.)

58/1 *Chiloscyphus polyanthos* (L.) Corda 10, (1931, A. Smith and G.H.A.)

62/9 *Cephaloziella starkii* (Funck) Schiffn. 11, (1931, G.H.A.)

63/2 *Cephalozia bicuspidata* (L.) Dum. 1, (1948, F. Rose); 10, (1931, G.H.A.)

63/5 *Cephalozia connivens* (Dicks.) Spr. 1, (1939, G.H.A.)

66/1 *Odontoschisma sphagni* (Dicks.) Dum. 2, (1930, G.H.A.)

69/1 *Diplophyllum albicans* (L.) Dum. 2, (1932, G.H.A.); 8, (1931, G.H.A.); 10, (1931, G.H.A.)

70/7 *Scapania irrigua* (Nees) Dum. 7, 1928, G.H.A.)

70/12 *Scapania nemorosa* (L.) Dum. 7, (1929, G.H.A.)

70/15 *Scapania undulata* (L.) Dum. 3, (1938, G.H.A.)

71/1 *Radula complanata* (L.) Dum. 4, (1910, G.H.A.)

73/3 *Porella platyphylla* (L.) Lindb. 3, (1933, G.H.A.); 5, (1933, G.H.A.); 8, (1932, G.H.A.)

G.H.A. — G. H. Allison
J.H.C. — J. H. Chandler
M.S. — M. R. D. Seaward

Nomenclature and index numbers according to Jones, E. W., "An Annotated List of British Hepatics", *Trans. Brit. Bryol. Soc.*, **3**, pp. 353-374 (1958).

LICHENOLOGY

Mark R. D. Seaward, b.sc.

The following county and vice-county records have been made since the publication of Lees' Outline Flora in 1892 (see: White's Directory of Lincolnshire for 1892—lichen list, pp. 60-61).

County Records:

Parmelia borreri (Sm.) Rurn. (80)
South Wood, Irnham, Sept. 1954, J. R. Laundon.

Lecanora dispersa forma *dispersa* (Pers.) Röhl. (122)
Tetney salt-marsh, Sept. 1961, M. Seaward.

Lecanora atra (Huds.) Ach. (156)
Tydd St. Mary, Sept. 1961, M. Seaward.

Lecanora conizaeoides Nyl. ex Cromb. (172)
South Wood, Irnham, Sept. 1954, J. R. Laundon.

Lecidea macrocarpa (DC.) Steüd. (365)
V.C's 53 and 54 according to Watson; further details unknown.

Xanthoria candelaria (L.) Kickx. (699)
Brigg churchyard, May 1961, M. Seaward.

Anaptychia ciliaris (L.) Massal. (749)
Stapleford Moor, 1898, S. C. Stow. There is no herbarium material.

Cladonia conista Robbins ex Allen (890 var.)
Linwood Warren, Nov. 1961, M. Seaward.

Cladonia coniocraea (Flörke) Spreng. (891)
South Wood, Irnham, Sept. 1954, J. R. Laundon.

Cladonia gracilis (L.) Willd. (899)
Alford, Oct. 1891, W. Riches (det. C. H. Wright). There is no herbarium material.

Cladonia scabriuscula (Del.) Leight. (906 var.)
Woodhall Spa, Oct. 1961, Mrs. O. V. Spurrier.

Cladonia squamosa (Scop.) Hoffm. (910)
Twigmoor, April 1961, M. Seaward.

Lepraria incana (L.) Ach. (959)
Brickwork, Holton-le-Moor, Aug. 1961, M. Seaward.

Peltigera praetextata (Flörke) Vain. (995 var.)
Humberstone, Dec. 1930, G. H. Allison.

Peltigera polydactyla (Neck.) Hoffm. (999)
Woodhall, Autumn 1930, G. H. Allison.

Collema limosum (Ach.) Ach. (1065), *Collema cristatum* (L.) Weber (1070) and *Collema conglomeratum* Hoffm. (1079).
Grantham, June 1898, L.N.U. Meeting (see: *Naturalist*, 1898, p. 245). There is no herbarium material to substantiate these three records.

Vice-county Records:

Lecanora radiosa (Hoffm.) Schaer. (116)
V.C. 54 according to Watson; further details unknown.

Lecanora conizaeoides Nyl. ex Cromb. (172)
V.C. 54, Scotton Common, Aug. 1959, M. Seaward.

Biatorella pruinosa (Sm.) Mudd. (521)
V.C.53 according to Watson; further details unknown.

Buellia canescens (Dicks.) De Not. (793)
V.C.53 according to Watson; further details unknown. Records for S. Lincs. however since Watson's publication.

Cladonia coniocraea (Flörke) Spreng. (891)
V.C.54 Woodhall Spa, Aug. 1961, Miss W. Heath.

Index number and vice-county reference under nos. 116, 365, 521 and 793 are according to the "Census Catalogue of British Lichens" (W. Watson, 1953). Watson's nomenclature is, however, modified in many instances to bring into line with modern trends of classification.

I should like to thank Mr. J. R. Laundon of the British Museum (Natural History) for his identification and verification of the majority of the above species.

MYCOLOGY

Miss G. M. Waterhouse, M.Sc.

For the annual foray we had the most perfect day and also a record turn-out—about 100 gathered at Doddington Wood. We spent the first part of the time in the 'Cinder Plot' and the second in the woods on the opposite side of the road, both visited by the kind permission of Col. R. G. E. Jarvis. But the time was far too short to do justice to the collecting potentialities of these areas—both were excellent collecting grounds.

Some of the original woodland, typical of the Skellingthorpe-Doddington region in general, namely silver birch heath, is still standing, but most of it has been cut over and planted with pine, etc. at different times. We found the usual fungi typical of birch heath, Amanitas, Russulas, Lactarii, and Boleti. The most spectacular find was a large tree stump almost completely covered by the black 'fingers' of *Xylosphaera* (formerly *Xylaria*) *polymorpha*.

Division 13 has been well worked in the past and it was surprising that we secured 5 new records for Lincolnshire and 22 for Division 13. In addition, 46 other identifications were made.

An interesting innovation this year was the introduction of the Junior Section to the fungus world. On the Saturday morning before the foray a keen crowd gathered at the Technical College to look at specimens and learn something of the organisms they were going to search for in the afternoon. I hope this will become an annual event.

For the rest of the year, it has been quite a good one for fungi and more people than usual have sent in specimens. Mr. Houghton and his boys sent in a record of about 100 specimens all told from Division 5, among which were 9 county and 18 divisional new records. Mr. Houghton also conducted a foray for the Scunthorpe Museum Society in Manby Wood which produced 36 specimens (1 new county record and 3 new for Division 2) and sent in a list of 5 for Tumby Wood L.N.U. meeting. Mr. Holland sent 5 specimens, all of which were new divisional records. Mr. Bates (an expert on myxomycetes from Yorkshire now living in the county) produced 16 myxomycetes which comprised 4 new county records and 1 for Division 12. Nurse Heath sent 24 specimens (with 5 new divisional records). I offer my warm thanks to all these contributors for making it such a successful year.

FUNGUS FORAY, DODDINGTON, Nr. LINCOLN

October 14th, 1961

New records for the County:

Psathyrella squamosa (Karst.) Moser
P. nolitangere (Fr.) Pears. & Denn.
Crepidotus luteolus (Lamb.) Sacc.
Hyaloscypha stevonsoni (Berk. & Br.) Nannf.
Cribraria rufa Rost.

New Records for Division 13:

Amanita pantherina (DC.) Secr.
Collybia dryophila var. *aquosa* (Bull.) Rea
Tricholomopsis rutilans (Schaeff.) Sing.
Lactarius vietus (Fr.) Fr.
Russula aeruginea Lindbl. ex Fr.
R. atropurpurea (Kromb.) Britz.
R. nigricans (Bull.) Fr.
R. puellaris Fr.
Mycena fibula (Bull.) Kühn.
Cortinarius armillatus (Fr.) Fr.
Lacrymaria velutina (Pers.) Konr. & Maubl.
Boletus chrysenteron Bull. ex St. Amans
B. rubellus Krombh.
Lenzites betulina (L.) Fr.
Merulius tremellosus (Schrad.) Fr.
Daedalea quercina (L.) Fr.
Polystictus abietinus (Dicks.) Fr. on pine
Fomes igniarius (L.) Fr. on birch
F. annosus Fr. on pine
Thelephora terrestris (Ehrb.) Fr.
Melampsoridium betulinum (Desm.) Kleb. on birch
Trichderma viride Pers. ex Fr.

Other identifications—not new records:

Amanita muscaria (L.) Hook.
A. citrina (Schaeff.) S. F. Gray
A. rubescens (Fr.) S. F. Gray
A. fulva (Schaeff.) Secr.
Cystoderma amianthinum (Scop.) Fayod
Collybia maculata (Alb. & Schw.) Kumm.
C. peronata (Bolt.) Kumm.
Tricholomopsis platyphylla (Pers.) Sing.
Laccaria laccata (Scop.) Cke
L. amethystea (Bull.) Murr.
Mycena galericulata (Scop.) S. F. Gray
M. epipterygia (Scop.) S. F. Gray
Lactarius rufus (Scop.) Fr.
L. glyciosmus (Fr.) Fr.
L. turpis (Weinm.) Fr.
L. flexuosus (Pers.) S. F. Gray
Russula emetica (Schaeff.) S. F. Gray
R. ochroleuca (Pers.) Fr.
Gymnopilus penetrans (Fr.) Murr.
Paxillus involutus (Batsch) Fr.
Tubaria furfuracea (Pers.) Gill.
Hypholoma fasciculare (Huds.) Kumm.

Psilocybe semilanceata (Fr.) Kumm.
Coprinus micaceus (Bull.) Fr.
C. atramentarius (Bull.) Fr.
Boletus piperatus Bull. ex Fr.
B. badius Fr.
B. elegans Schum. ex Fr.
B. testaceoscaber Secr.
B. scaber Bull. ex Fr.
Polyporus betulinus (Bull.) Fr.
P. perennis (L.) Fr.
Polystictus versicolor (L.) Fr.
Trametes gibbosa (Pers.) Fr.
Stereum hirsutum (Willd.) Fr.
Dacromyces deliquescens (Bull.) Duby
Calocera viscosa (Pers.) Fr.
Clavaria corniculata (Schaeff.) Fr.
C. cristata (Holmsk.) Fr.
Phallus impudicus (L.) Pers.
Scleroderma aurantium Pers.
Lycoperdon perlatum Pers.
L. echinatum Pers.
Xyloshaera hypoxylon (L.) Dumort.
X. polymorpha (Pers.) Dumort.
Coryne sarcoides (Jacq.) Tul.

OTHER NEW RECORDS, 1961

New records for the county:

Amanita porphyria (Alb. & Schw.) Secr.	5
Collybia erythropus (Pers.) Kumm.	5
Hygrophorus flavescens (Kauff.) Sm. & Hesler	5
H. berkeleyi Orton	5
Inocybe lacera (Fr.) Kumm.	5
Psathyrella gossypina (Bull.) Pears. & Denn.	5
Paxillus panuoides (Fr.) Fr.	5
Pustularia rosea Rea	5
Helotium conscriptum (Karst.) Karst.	2
Stilbella erythrocephala (Ditm.) Lindau	5
Pythium paroecandrum Drechs. on chrysanthemum	17
Physarum virescens Ditm.	10
Cribraria macrocarpa Schrad.	10
Trichia floriformis G. Lister	10
Arcyria carnea G. Lister	10

New divisional records:

Laccaria laccata (Scop.) Cke	1
Clitocybe clavipes (Pers.) Kumm.	5
Lepista saeva (Fr.) Orton	5

Tricholoma brevipes (Bull.) Kumm.	5
Mycena haematopus (Pers.) Kumm.	14
Lyophyllum decastes (Fr.) Sing.	6
Hygrophorus langei (Kühn.) Pears.	2, 5, 10
H. niveus (Scop.) Fr.	5
Lactarius glyciosmus (Fr.) Fr.	5
Russula xerampelina (Schaeff.) Fr.	5
Conocybe pygmaeo-affinis (Fr.) Kühn.	5
Gymnopilus penetrans (Fr.) Murr.	7
Hebeloma testaceum (Batsch) Quél.	2
Stropharia semiglobata (Batsch) Quél.	1
Panaeolus retirugis (Fr.) Gill.	1
Psathyrella gracilis (Fr.) Quél.	5
P. spadiceo-grisea (Fr.) Maire	5
Hypholoma subericaeum (Fr.) Kühn.	1
Boletus elegans Schum. ex Fr.	5
B. subtomentosus L. ex Fr.	5
B. testaceoscaber Secr.	7
Polyporus lacteus	2
Poria versipora (Pers.) Baxt.	5
Daedalea quercina (L.) Fr.	2
Merulius tremellosus (Schrad.) Fr.	5
Thelephora terrestris (Ehrb.) Fr.	5
Calvatia caelata (Bull.) Morg.	6
Cyathus olla Batsch ex Fr.	14
Crucibulum vulgare Tul.	3
Clavaria cristata (Holmsk.) Fr.	2
Peziza cerea Sow. ex Mérat	6
Aleuria aurantia (Fr.) Fuck.	1, 5
Sporormia intermedia Auersw.	5
Helvella crispa Fr.	6
H. lacunosa Afz. ex Fr.	10
Reticularia lycoperdon Mull.	1, 5
Trichia botrytis Pers.	12
Fuligo cinerea Morg.	14

ENTOMOLOGY

Lepidoptera

G. A. T. Jeffs, F.R.E.S.

The year started off in a very promising manner. Many species appeared at an early date and in good numbers and I felt that at last we were going to have a really good season. However, it was not to be, for soon conditions were back to normal, both as regards the weather and the specimens. In fact it turned into what has been one of the poorest years for butterflies and moths that I can remember. Particularly was this so in the case of our butterflies. Even our commonest Whites and Browns have been seen only in very poor numbers and on several

occasions, when conditions appeared to be ideal, not one butterfly was to be seen on the wing.

At the beginning of the season, the Satyrids appeared particularly early. Walls (*D. megera* L.) were seen at Scunthorpe and Sleaford as early as May 11th and 12th. I am delighted to report that the Large Heath (*C. tullia* Müll.) can still be found in Lincolnshire, after we imagined that it had disappeared from its only habitat. Mr. J. H. Duddington reported it from two previously unknown areas in the north of the county. On June 25th he saw freshly emerged males and females flying and in the other area more to the east—two females on July 11th. It will be interesting to watch these areas and see how this essentially northern species fares. He also reported the Grayling (*E. semele* L.) in good numbers from the Scunthorpe area between July 16th and September 17th.

Vanessids, with the exception of the Red Admiral (*V. atalanta* L.) which was very plentiful in late September, have been far below their average numbers. The Painted Lady (*V. cardui* L.) has only been seen in one area this season. Mr. R. E. M. Pilcher saw a couple in his garden at Boston and it seems gradually to have decreased in numbers since 1958 when it was really quite plentiful. However, as this species is a notorious migrant, the numbers fluctuate annually. Its real home is probably North Africa where it is often exceedingly numerous.

No Commas (*P. c-album* L.) have been noted at Skellingthorpe where Canon G. Houlden usually manages to see the odd one each year. Our only report comes from Boston where a single specimen was recorded. Neither have we had our usual reports of the White Admiral (*L. camilla* L.) from Skellingthorpe, but they still do occur elsewhere in the county, and in reasonably strong numbers.

Fritillaries have also been very scarce indeed. Mr. Duddington saw one Dark Green (*A. aglaia* L.) near Messingham on July 1st and another on the very early date of June 16th at Scotton Common. These are our only records. Another species, a Fritillary in name only, the Duke of Burgundy (*H. lucina* L.) was reported by Mr. Pilcher, who says it is lingering on in his locality but it is doomed unless its habitat improves.

The Chalk-hill Blue (*L. coridon* Poda) is still to be found in fair numbers at Ancaster. I paid the area a visit and was delighted to see this insect again after hearing so many conflicting stories which reported either that it had been wiped out by spraying or it was still plentiful or it had almost disappeared and so on. My observation was also confirmed by Mr. G. N. Holland who reported having seen them in fair numbers on July 16th and again by Canon Houlden who saw both males and females (resting on *Scabious*) on August 3rd. The Holly Blue (*C. argiolus* L.) which was seen in such large numbers last year was still reasonably common, but nothing like so abundant as previously. The Common Blue (*P. icarus* Rott.) was noted again near Grimsby, flying in reasonable numbers.

One bright spot is the news that Chequered Skippers (*C. palaemon* Pall.) have again been reported from their old locality after an absence of a year. Its old stronghold had been so devastated by 'tidying up' that it was thought that too much of its food plant had been destroyed, with the consequent destruction of the species, however it would appear that such is not the case.

Mr. Pilcher again reports the Essex Skipper (*T. lineola* Ochs.) from his area and states it is still extending its range. This species, which is so like the Small Skipper (*T. sylvestris* Poda.) in appearance, may perhaps occur unnoticed in other areas. It can, however, be separated by the black undersides of the knobs of its antennae. The Grizzled (*P. malvae* L.), Dingy (*E. tages* L.), Large (*A. sylvestris* Poda.) and Small Skippers (*T. sylvestris* Poda.) have all again been seen this year in small numbers.

A few White-letter Hairstreaks (*S. w-album* Knoch.) have been observed but none of the usual Green Hairstreaks (*C. rubi* L.) have been reported. Only one species of the Yellows—the Brimstone (*G. rhamni* L.) has been seen but this was in fairly good numbers and over a wide range. Mr. Holland reported it as early as March 16th from Sleaford. Again, no Clouded Yellows (*C. croceus* Fourc.) have been seen.

The Orange-tips (*E. cardamines* L.) first noted by Rev. P. C. Hawker on May 9th at Greetwell, were earlier than last year.

Our resident Whites have only been seen in smallish numbers—so also has the Small Tortoishell (*A. urticae* L.). In fact none of our commoner butterflies have been in strong numbers this year.

Before ending my brief note on the butterflies, I felt I could not leave out a belated report for 1958 which came from Mr. E. J. Redshaw of Pinchbeck, who has been making a survey of the Welland Washes near Spalding. He reported his startling find as follows: "One female Swallow tail (*P. machaon* L.) near Cowbit on August 10th, 1958. It was resting on the flower umbel of a clump of *Angelica sylvestris*. It is assumed that the specimen was a wind-borne vagrant from Wicken Fen. The wind at that time was S.S.E. at moderate velocity, weather humid with light showers." The last record of this species is way back in 1888, when one was taken on the Witham Bank at Boston by Mr. J. C. Lane Claypon. You never know what may turn up.

Moths also made an encouraging start to the season and many species emerged at a very early date. Some were quite abundant, particularly the Beauties, other early species included the March Moth (*A. aecularia* Schiff.) on February 15th, Scarce Prominent (*O. carmelita* Esp.) on April 10th, Grey Birch (*E. punctulata* Schiff.) on April 16th and Clouded Silver (*B. punctata* Fabr.) on April 19th, and these were followed by a good show of the Prominents.

Mr. Pilcher reported that in view of my remarks last year concerning the scarcity of the Great Prominent (*N. anceps* Geoze.) he went to

check up on its position in his area, and in spite of far from ideal conditions, he was able to see 12 specimens on his sheet at once. It would appear, therefore, to be a far more abundant species in the oak woods of south and mid-Lincs. than it is in the north of the county, because the only other report of this species comes from Rear Admiral Torlesse who saw a single specimen at Linwood on May 3rd. I tried on several occasions to find it again but with no success.

After this good start things seemed to tail off. Numbers in my moth-trap at Grimsby were the lowest ever recorded, in fact the only things that appeared in anything like reasonable numbers were some dark varieties of the Buff Ermine (*S. lutea* Hufn.) and some very beautiful melanic forms of the Scalloped Hazel (*G. bidentata* Clerck.). Other species which turned up in comparatively reasonable numbers included Hebrew Character (*O. gothica* L.) Clouded Drab (*O. incerta* Hufn.), Common Rustic (*C. secalis* L.), Marbled Minor (*P. strigilis* Clerck) some very dark forms, and of course the usual Yellow Underwings (*T. pronuba* L.) and Dark and Light Arches (*X. monoglypha* Hufn. *X. lithoxylea* Schiff.). I was, however, happy to get a single specimen of the Grey Arches (*P. nebulosa* Hufn.).

We had our usual show of Hawk Moths, including Poplar (*L. populi* L.), Eyed (*S. ocellatus* L.), Lime (*D. tiliae* L.), Elephant (*D. elpenor* L.) and in addition Privet (*S. ligustri* L.), Convolvulus (*H. convolvuli* L.) and a single Humming-bird Hawk (*M. stellatarum* L.). Also, two Deaths Head (*A. atropos* L.), one in Grimsby and one at Lincoln, then last but by no means least on July 12th Mr. Pilcher saw a perfect male Bedstraw Hawk (*C. galii* Rott.). He stated that it was fifty years since he took his first and only other specimen. The first examples of this moth in Lincolnshire are reported by South as long ago as 1834, since when odd specimens have been seen. It is a very irregular immigrant and there is no evidence of a resident population in England, although its range extends through Europe and Asia to Siberia.

Normal migrants have not been reported in any particular numbers anywhere this year, even the Silver-Y (*P. gamma* L.) has been below average. No Great Brocades (*E. occulta* L.) have been seen and only a small number of Pearly Underwings (*P. saucia* Hubn.) and the Dark Sword Grass (*A. ypsilon* Rott.) came to my M.V. lamp in Grimsby.

Among the agrotids Mr. Pilcher says he has only seen one Obsure (*L. obsoleta* Hubn.) and one Southern Wainscot (*L. straminea* Treits.). No Stout Darts (*S. ravida* Schiff.) which were plentiful last year and nice things like the Gold Spot (*P. festucae* L.) abundant most years, were quite rare.

Admiral Torlesse however reported that during the autumn he found things rather better and added that this had been the best year he had known for Angle-striped Sallow (*E. paleacea* Esp.) since 1955. They were quite common at light and sugar in its usual haunts.

Finally, a few specimens of note recorded during the year—two Red Underwings (*C. nupta* L.), one seen by Canon Houlden on August 28th at Lincoln and the other by Mr. Holland at Ruskington on September 10th. He also took a single specimen of the Chamomile Shark (*C. chamomillae* Schiff.) at Sleaford and a Grass Rivulet (*P. albulata* Schiff.) at Mablethorpe. This last capture is most interesting since there is no other note of this species in Lincs. since the one taken by Mr. G. W. Mason in 1909. Mr. Holland also bred out two Goat Moths (*C. cossus* L.) from larvae taken at Sleaford.

The Dusky Lemon Sallow (*C. gilvago* Schiff.) has also been reported and the little moth, Silver Hook (*E. uncula* Clerck.), has again been seen. This quite scarce and local moth would seem to be spreading; it is now known to occur in several suitable localities in the county. Mr. Duddington again took the Grass Emerald (*P. pruinata* Hufn.) in his district. Whilst this species is pretty well distributed throughout the British Isles, it is very seldom recorded here. The very variably marked Map-winged Swift (*H. fusconebulosus* Deg.) was taken at Tumby during the L.N.U. meeting in June and several Orange Swifts (*H. sylvinus* L.) have been reported.

Among Mr. Holland's interesting list of Microlepidoptera he reported having bred a Knot-Thorn (*H. cretacella* Rössl). The larvae mine the tops of the stems of Ragwort under the protection of silken webbing and frass. This is a completely new record for the county.

Another interesting species—the Seraphim (*L. halterata* Hufn.) has been recorded again for Lincolnshire. Although taken as long ago as 1948 it has only just been identified by Mr. Duddington whilst he was recently going through his specimens. This little moth, closely related to the Pugs, has only been seen on very few occasions in the county and is the one and only record since 1923.

On the whole I would say 1961 was a poor year, but not without its highlights.

Now in conclusion I should like to thank very much indeed all members who have sent me their observations during the year and in particular Mr. J. H. Duddington, the Rev. P. Hawker, Mr. G. N. Holland, Canon G. Houlden, Mr. R. E. M. Pilcher, Rear Admiral D. Torlesse, Mr. E. J. Redshaw and Mr. D. A. E. Spalding of the Scunthorpe Museum.

ARACHNOLOGY

G. W. Whatmough, M.P.S.

There appears to be less to report this year than in any recent year. This is due, I imagine, to an uncertain summer with a consequent falling off in field work. I have only been able to attend two field meetings (the first and the last) and have only made one visit each to Gibraltar Point and Linwood Warren.

Tumby Wood, which used to be one of the happier hunting grounds of the Union's collectors from the 1890's onwards, was visited in May and a few fresh species were noted. Many of the interesting spiders which were common to earlier collectors are now quite rare or completely absent. The ever increasing colonies of the Wood-ant being, no doubt, partly responsible.

The Fungus Foray, usually one of the best meetings for the araneologist, held this year at Doddington—one of the best areas for spiders and their relatives—was expected to produce excellent results. It is astonishing that the only spiders seen in quantity were immature wolf-spiders, normally much less active at this time of the year. Evidence of orb-weavers was almost non-existent. Only a few specimens of *Meta segmentata* were seen at a time when their orbs could be expected on every bush and weed. No adequate explanation can be offered climatic or man-made, but it is interesting to note that insects appeared to be equally scarce.

Mr. Houghton and Mr. Duddington continue to provide material chiefly from the northern half of the county, while Mr. Jeffs has been able to pass on some interesting foreign spiders which had been taken alive in Grimsby. One particularly striking individual proved to be an adult female sparassid of the species *Olios sancti-vincenti* (Simon), an infrequent stowaway in fruit cargoes.

After the last report had been compiled Mr. Duddington sent in his observations on large quantities of gossamer which he had seen covering an area of several acres of short grassland in the Scunthorpe region. It was an evening in late September and dew which had already collected on the masses of gossamer threads, gave the ground in the failing light, the appearance of the shining surface of a vast lake. A visit on the morning of the same day would have revealed many thousand of migratory linyphiids. It is remarkable how it is always easier to find evidence of a past spider movement than it is to be present when the creatures are actually preparing to move!

Several people have been on the look-out for the Water-spider but still without sign of success. It is to be hoped that they will not be discouraged.

A few more spiders have been taken at Scotton Common but nothing new has been recorded. Work is particularly needed in this area where our knowledge of the arachnid fauna is obviously very incomplete. The same remarks apply equally to the Isle of Axholme and to the extreme south of the county.

Order Pseudoscorpiones

Chthonius ischnochelus (Hermann)

A solitary specimen was found in April under a piece of limestone in a lane leading from Canwick village, Lincoln. This is a new record for division 13 and the first local record for thirty years.

ORDER OPILIONES Harvest-spiders

Nemastoma chrysomelas (Hermann)

This species was new to the county when a single example was found in dead leaves at Woodhall Spa about six years ago. Another single specimen has been taken this year at Canwick. It was found in late October, apparently already in hibernation, under a piece of limestone. There was no movement when the stone was upturned nor when the animal was touched with a grass. When dropped into a tube there was still no sign of life but on warming in the hands a little movement began.

ORDER ARANEAE True spiders

Family Pholcidae

Pholcus phalangioides (Fuesslin)

This long-legged southern house-spider which had previously only been found at one place in the county (Tattershall), has now been taken in another quite different locality. Mr. G. N. Holland was, I should imagine, suitably amazed when he found one in his bath. It is of course too early to say if it is properly established in Sleaford as it is in Tattershall Church.

Family Gnaphosidae

Herpyllus blackwalli (Thorell)

Found to be living in outhouses attached to the Red Lion Hotel at Revesby. It is more common in occupied rooms. New record for division 10.

Family Clubionidae

Clubiona pallidula (Clerck)

This spider was found in typical silken cells beneath bark on cut wood at the Tumby field meeting.

Family Thomisidae

Diaea dorsata (Fabr.)

A very attractive little thomisid with apple-green legs and a reddish brown body. This specimen was beaten from hazel in Elsea Wood near Bourne by Mr. Holland. This is only the second time it has been found in Lincolnshire. The spider was immature but could not be confused with any other British species.

Xysticus ulmi (Hahn.)

Two males of this striking little spider were again found by Mr. E. C. Riggall in Scotgrove Wood.

Family Salticidae

Evarcha falcata (Clerck)

Several females were seen running on cut timber in St. Helen's Wood at Tumby in May.

Family Lycosidae

Lycosa lugubris (Walck)

Plentiful in Tumby Woods. It is strange that this, now common, spider should not have been found there by earlier workers.

Tarentula pulverulenta (Clerck)

Taken in Bird's Wood (Isle of Axholme) by Mr. H. J. Houghton. It is proof of the neglect of this area by collectors that this is the first record of this very common spider for Division 1.

Pirata hygrophilus Thorell

Rutted patches in the main ride in St. Helen's Wood (Tumby) had obviously been very wet, providing the sort of habitat where wolf-spiders of the genus *Pirata* should be happy. I failed to find any but the common lycosids which were running everywhere. Mr. Houghton was more fortunate, he took an adult male which proved to be *P. hygrophilus*.

Family Argyopidae

Meta segmentata mengei (Clerck)

Both sexes found to be mature at Linwood in April—a month earlier than they had previously been seen.

Araneus gibbosus (Walck.)

Many immature males were found sheltering in cones on the lower branches of pines at Linwood in April. It seems probable that they had taken refuge there whilst awaiting their final moult. Both sexes are usually mature by early June, but by that time numbers are greatly depleted either by birds or other spiders or both. An adult specimen was, however, found as early as May by Mr. E. C. Riggall in Skellingthorpe Old Wood.

Family Linyphiidae

Wideria melanocephala (O.P.C.)

A tiny but attractive orange and grey spider found in a small collection made at Gibraltar Point in August 1960 has proved to be the above species. A new record for the Reserve and the County, verified by Mr. D. W. Mackie of the Lancashire and Cheshire Naturalists' Society.

Dicymbium nigrum (Bl.) var. *brevisetosum* Locket

The few males of this species in the local collection have been re-examined and all have been found to belong to the recently described variety *brevisetosum*. All have been found on river banks or in flood refuse at Hatcliffe, Lincoln and Torksey.

Entelecara acuminata (Wider)

A solitary male found at Linwood Warren in June 1960 but only recently identified is another new record for this Nature Reserve.

Monocephalus fuscipes (Bl.)

A fairly common linyphiid but found for the first time at Linwood Warren, where it was living in grass-roots.

LINCOLNSHIRE BIRD REPORT, 1961

R. K. Cornwallis, M.A., M.B.O.U. and A. D. Townsend, M.B.O.U.

There were two additions to the Lincolnshire list in 1961, the Serin and the Marsh Warbler. Breeding records included the Red-breasted Merganser (the first Lincolnshire record and the most southerly ever recorded in Britain) and the first Stonechat for many years. Other rarities were Spoonbill, Rough-legged Buzzard, Osprey, Pectoral Sandpiper, Grey Phalarope, Temminck's Stint, Golden Oriole and Red-breasted Flycatcher. Autumn movements of Dunnocks on the coast reached the proportions of an irruption. Blackcap and Garden Warbler were both seen in winter. A large number of ringing recoveries include a Lincolnshire-ringed Woodpigeon recovered in France, a Swallow in Algeria, a Ring Ouzel in Morocco, a Robin in Denmark and the first British-ringed Blackbird to be recovered in Poland. A repeat census of breeding Mute Swans was carried out.

Regular watching at selected sites continues to be an invaluable aspect of Lincolnshire ornithology and we are pleased to note the establishment of the Spalding Bird Observatory (SBO) and of regular observations by the Hull Scientific and Field Naturalists' Club (HFN in the List) between Barrow-on-Humber and New Holland. It is sad, however, to have to record the passing of two of the older stalwarts—Mr. B. A. Pye of Cleethorpes and Mr. R. Wood Powell of Lincoln.

A new venture in the county has been the ringing of waders caught in rocket-propelled nets by the Wash Wader Ringing Group of the Wildfowl Trust. Nearly 4,000 of 11 species were ringed in 1961, which should add greatly to our knowledge of wader migration in the county.

Deaths of birds from toxic chemicals used in agriculture again caused very great concern. More incidents were recorded in Lincolnshire in spring than in any other county and they included a massive kill at Tumby in which over 6,000 birds of 20 species died. These included 14 Long-eared Owls, 5 Tawny Owls and 5 Sparrow Hawks. The status of such predator birds is most seriously threatened and we ask all observers to keep us informed of developments in their own districts.

The conventions adopted in previous reports are repeated: i.e. *B.O.U. Checklist* order with numbers in that list as reference; all records to be taken as of a single bird unless otherwise stated; GP—Gibraltar Point; LSF—Lincoln Sewage Farm, Canwick; Bardney—the settling

ponds at Bardney Sugar Beet Factory; SBO—Spalding Bird Observatory; S-T Reserve—Saltfleet-Theddlethorpe Reserve; H-W Ref—Humber Wildfowl Refuge; S.F.—Sewage Farm; G.P.—Gravel Pit; CBC—Cambridge Bird Club Report (obtainable, price 5 -, from A. E. Vine, 101 Victoria Street, Littleport, Cambs.).

In addition to those in the List the following occurred in the county in 1961 (breeding species in italics): Scoter, *Red-legged Partridge*, *Partridge*, *Pheasant*, *Moorhen*, *Coot*, Jack Snipe, Common Sandpiper, *Redshank*, Herring Gull, Common Gull, *Stock Dove*, *Cuckoo*, *Barn Owl*, *Little Owl*, *Tawny Owl*, *Nightjar*, *Kingfisher*, *Green Woodpecker*, *Great Spotted Woodpecker*, *Sand Martin*, *Carrion Crow*, *Great Tit*, *Blue Tit*, *Marsh Tit*, *Willow Tit*, *Wren*, *Mistle Thrush*, *Song Thrush*, *Robin*, *Sedge Warbler*, *Whitethroat*, *Lesser Whitethroat*, *Willow Warbler*, *Goldcrest*, *Spotted Flycatcher*, *Meadow Pipit*, *Greenfinch*, *Goldfinch*, *Chaffinch*, *Yellowhammer*, *Corn Bunting*, *Reed Bunting*.

MIGRATION AT GIBRALTAR POINT

January

A Merlin flew to W. on 5th and on 14th a Collared Dove, ringed at Spurn on May 9th, 1960, was trapped in a Seacroft garden.

March

A southerly passage of Chaffinches developed on 15th and wader peaks were 4,000 Oystercatchers and 40,000 Knot. Two Bearded Tits were trapped on 30th.

April

A small passage of Linnets and Tree Sparrows took place on 1st and continued until 3rd. Two Wheatears, Chiffchaff, Whimbrel and a Kestrel occurred during this period. Numbers of Redstarts and Willow Warblers arrived after S.E. winds on 5th/6th and a Black Redstart, Brent Goose and two Shorelarks were recorded. A Chiffchaff and many more Redstarts arrived on 7th when a southerly movement, involving 40+ Wheatears, took place across the reserve. A Ruff and the first Little Terns had arrived by 15th. A high level S. and S.W. passage of Linnets occurred next day and a Treecreeper was seen. Linnets and Tree Sparrows passed over the reserve during the next three days, and a Red-breasted Merganser was recorded on 18th. Finches again moved S. on 20th/21st, two Whooper Swans arrived on 24th, a Cuckoo on 27th, and upwards of 40 Wheatears on 30th.

May

Two Kestrels occurred on 5th and Whimbrel were moving N. from 9th to 15th. Ten Cuckoos and a Ring Ouzel were recorded next day, and 48 Turtle Doves flew N.E. and several Goldfinches arrived at a great height from S. On 16th a Serin, a new species for Lincolnshire, occurred. A Ring Ouzel was still present on 20th, and a Montagu's Harrier was seen. N.E. winds on 21st brought a northerly passage of Swifts and by the 23rd a Red-backed Shrike had arrived.

July

Numbers of Terns increased on 7th, and a light passage of House and Sand Martins developed on 15th. Four Kestrels were recorded on 25th and terns had reached a fresh peak by next day. Migrants on 30th included 30 Kittiwakes, three Arctic Skuas, Sparrowhawk, 12 Pied Wagtails and two Eiders.

August

Small numbers of Swifts moved S. on 4th, and a steady passage of Kestrels continued until 19th. Other migrants during this period were few but included two Black-tailed Godwits on 10th, Black Terns on 12th and 19th, Spotted Redshank and two Ruffs on 13th. A Green Sandpiper occurred on 19th and 20 Goldfinches flew S. An early Wigeon appeared on 20th and on 23rd a Manx Shearwater. An early morning passage of Swallows took place on 26th/27th and included small numbers of Swifts, Sand Martins and Yellow Wagtails. Upwards of 300 Dunnocks were present in the bushes at dawn on 27th. These were very restless, and numbers rapidly dropped, but increased slightly again in late afternoon. A small passage of Willow Warblers occurred and five light phased Arctic Skuas flew S.W. Dunnocks were less in evidence next day, but the numbers of Whitethroats doubled, three Pied Flycatchers arrived and five Wigeons and a Bittern were recorded. S.E. winds on 29th brought a small increase in Pied Flycatchers, Redstarts and a Lesser Whitethroat. Waders also increased including Whimbrel, Bar-tailed Godwits, Sanderling, Ringed Plover and three Black-tailed Godwits. Pied Flycatchers, Redstarts and Willow Warblers moved down the coast on 30th, ten Whinchats and a Reed Warbler were trapped. Northerly winds next day coincided with an increase in Song Thrushes and Blackbirds, and a Spotted Redshank occurred.

September

With east winds on 1st a variety of species were moving including both Pied and Spotted Flycatchers, Redstarts and Dunnocks, and a Red-backed Shrike was seen. There was no visible migration on 3rd until a small number of Pied Flycatchers arrived at mid-day. There were again few birds next day with north-easterly winds, but an early Fieldfare arrived. Pied Flycatchers, a Wryneck and a Marsh Harrier occurred with easterlies on 5th and during the morning there was a build-up in numbers of Dunnocks along the inland dunes. Migrants on 6th included Swallows, Swifts, Meadow Pipits, Carrion Crows and several Lapwings. A Great Spotted Woodpecker occurred on 7th and three Kestrels flew to S. A few Swifts, Swallows and Martins moved S. during this period and another Kestrel was recorded on 8th. A strong hirundine passage developed on 11th and continued to a lesser degree until 14th. There were few birds until 17th when migrants included a Chiffchaff, Lesser Whitethroat, Robin and a few Meadow Pipits flew S. There were more pipits next day and several Tree

Sparrows; and upwards of 500 Gannets were counted offshore. There was another peak of 200+ Dunnocks on 19th and a small influx of Redstarts and Pied Flycatchers in late afternoon. Several Siskins and a Grey Wagtail moved S.W. on 20th. Five Gannets flew south, while other migrants were several Pied Flycatchers, Blue Tits, Reed Buntings, Whinchat and Robin. 100+ Dunnocks and 50 Song Thrushes were present most of the morning in thick mist. 20 Blackbirds flew S. and later a small party of Dunnocks moved S.W. and a Siskin was seen. A few more Dunnocks left the area and as the mist cleared a heavy S.W. passage of Swallows, Meadow Pipits and Linnets developed. Other species moving south were several Siskins, Reed Buntings, Blue Tits, House and Sand Martins and a Chaffinch. Movement further increased next day with many Linnets, House Sparrows, Meadow Pipits, Swallows and several Greenfinches moving S. and S.W. A Pied Wagtail, five Carrion Crows and a Great Spotted Woodpecker flew S.W., a Snipe flew E. and 16 Mallard to N. 200+ Blackbirds were present along the inland dunes on 23rd and several Redstarts, Grey Wagtails, Blue Tits and Redpolls moved S.W.; a Great Skua and a Razorbill were recorded. Next day parties of Linnets, Greenfinches and Reed Buntings were coasting southwards, a Glaucous Gull occurred and 2-300 Wigeon flew to S. Counts of waders on 25th revealed 3,000 Oystercatchers, 8,000 Knot and 3,000 Dunlin. Two Green Sandpipers occurred on 26th; other migrants included a few Swallows and Siskins. Next day 400 Starlings moved S.W. and 11 Grey Lag Geese arrived on 28th. Numbers of Mallard increased on 29th and a party of Long-tailed Tits occurred. Large numbers of Linnets were moving next day and small numbers of Blackbirds and Song Thrushes had left the area by mid-day.

October

Linnets (1,000 per hour) flew S. and S.W. on 1st with smaller numbers of Goldfinches and Greenfinches, and an Eider flew S. A Little Stint occurred on 2nd and next day large numbers of Blackbirds, Dunnocks, Linnets and a few Goldcrests were present in the bushes and a Great Skua was recorded. Linnets, Blackbirds, Swallows, Tree Pipits and Tree Sparrows were moving S. on 4th and 60 Twite were recorded on the marsh. 1,000+ Lapwings flew S. on 5th. There were more Lapwings next day while large numbers of House and Tree Sparrows flew S. and 75 Gannets drifted in the same direction; a Great Spotted Woodpecker occurred and next day 14 Tufted Ducks. A party of 90+ Collared Doves was counted in a tree in Syke's Farm on 11th; they had left by next day when 40 Chaffinches were present on the western dunes. A Stonechat was seen on 13th and the following day 800 Pinkfooted Geese arrived. A Hen Harrier occurred on 16th and birds of interest over the next few days were Shorelark, Snow Buntings, many Gannets, 1,000 Mallard and another Hen Harrier. Migrants next day included two Great Grey Shrikes, 11 Pochard, Great Skua, Ring Ouzel and a Black Redstart; by 22nd 1,000 Pinkfeet

were recorded. Lapwings moved S. on 24th and 26th and several Redwings and Fieldfares were seen. In spite of a strong S.W. wind on 28th many finches and buntings including 60 Redpolls were moving S.W. low over the ground; later the movement was joined by Lapwings and Fieldfares. The wind moderated next day and a high level passage of House and Tree Sparrows developed, and small flocks of Starlings arrived from E. Numbers of Redwings and Fieldfares increased next day and 200 Woodpigeons flew to S.

November

A heavy passage of Blackbirds took place throughout 4th; other species recorded were Puffin, Long-tailed Duck and five Velvet Scoters. Blackbirds reached a fresh peak on 5th, pouring into the reserve in tremendous numbers, along with 2,000 Skylarks and small numbers of Fieldfares. Hooded Crow, Snipe and Woodcock occurred next day, and on 7th 4,000 Pinkfeet and 400 Snow Buntings were recorded. A Long-tailed Duck occurred on 18th, a late Swallow flew S. on 19th, and on 15th and 20th several Woodcock flew southwards. Fieldfares increased on 22nd and next day a large concentration of gulls occurred on the spit. Interesting species on 25th were Sparrowhawk, four White-fronted Geese, two Stonechats and small parties of Chaffinches flew S. During the afternoon a high level passage of Fieldfares developed and another Swallow was recorded.

December

Snow Buntings numbered 200 on 1st and parties of Lapwings moved S. A Great Northern Diver and four Whooper Swans occurred on 16th. 32 Eiders flying E. on 25th and seven Mute Swans, which arrived from W. on 27th may have been the fore-runners of many species concerned in a hard weather movement on 28th. On that day Lapwings, Fieldfares, Redwings, Starlings, smaller numbers of Golden Plovers and several divers passed southwards over the reserve.

GIBRALTAR POINT OBSERVATORY RINGING PROGRESS

Species	1949-1960	1961	Grand Total
Gannet ...	1		1
Shag	1		1
Wigeon	1		1
Sheld Duck ...	1	1	2
Sparrow Hawk ...	30		30
Merlin	1		1
Kestrel	4		4
Water Rail ...	1	1	2
Moorhen ...	3		3
Coot	1		1
Oystercatcher ...	2		2
Lapwing ...	10	7	17
Ringed Plover ...	31		31
Little Ringed Plover ...	1		1
Turnstone ...	2		2
Woodcock ...	1		1
Redshank ...	3		3
Knot	1		1
Dunlin	3	2	5
Sanderling ...	7	1	8
Black-headed Gull	2		2
Little Tern ...	7		7
Stock Dove ...	29		29
Woodpigeon ...	34	4	38
Collared Dove ...		1	1
Turtle Dove ...	3		3
Cuckoo ...	82	2	84
Barn Owl ...	8		8
Little Owl ...	8		8

Species	1949-1960	1961	Grand Total
Long-eared Owl	4		4
Short-eared Owl	5		5
Nightjar ...	2		2
Kingfisher ...	1		1
Green Woodpecker	3		3
Great Spotted Woodpecker ...	11	1	12
Wryneck ...	9		9
Skylark ...	15	2	17
Swallow ...	169	24	193
Rook	1		1
Jackdaw ...	3		3
Magpie ...	44		44
Jay	1		1
Great Tit ...	233	6	239
Blue Tit ...	733	18	751
Coal Tit ...	34	1	35
Marsh Tit ...	4		4
Willow Tit ...	9		9
Long-tailed Tit	111	11	122
Bearded Tit ...		2	2
Treecreeper ...	7		7
Wren	353	29	382
Mistle Thrush ...	21	15	36
Fieldfare ...	11	3	14
Song Thrush ...	610	117	727
Redwing ...	96	13	109
Ring Ouzel ...	16		16
Blackbird ...	1992	1070	3062
Wheatear ...	35	4	39
Stonechat ...	6	2	8
Whinchat ...	41	9	50
Redstart ...	481	33	514
Black Redstart ...	4		4
Nightingale ...	5		5
Bluethroat ...	5		5
Robin	622	31	653
Grasshopper Warbler ...	3		3
Reed Warbler ...	17	1	18
Sedge Warbler ...	53	2	55
Icterine Warbler	6		6
Blackcap ...	83	7	90
Barred Warbler	14		14

Species	1949-1960	1961	Grand Total
Garden Warbler	207	6	213
Whitethroat ...	2108	96	2204
Lesser Whitethroat ...	113	9	122
Willow Warbler	2140	51	2191
Greenish Warbler	1		1
Chiffchaff ...	107	3	110
Wood Warbler ...	13		13
Yellow-browed Warbler ...	4		4
Goldcrest ...	33	38	71
Firecrest ...	2		2
Spotted Flycatcher ...	117	12	129
Pied Flycatcher	392	86	478
Red-breasted Flycatcher ...	4		4
Dunnock ...	844	308	1152
Meadow Pipit ...	94	6	100
Tree Pipit ...	8		8
Rock Pipit ...	2		2
Pied Wagtail ...	3		3
Yellow Wagtail	1		1
Great Grey Shrike	2		2
Red-backed Shrike	2		2
Starling	326	36	362
Rose-coloured Starling ...	1		1
Hawfinch ...	1		1
Greenfinch ...	282	86	368
Goldfinch ...	49	21	70
Siskin	7	6	13
Linnet	137	51	188
Twite	1	2	3
Redpoll	23	22	45
Bullfinch ...	5	4	9
Crossbill ...	1		1
Chaffinch ...	276	29	305
Brambling ...	10		10
Yellowhammer ...	69	11	80
Reed Bunting ...	319	89	408
Snow Bunting ...		9	9
House Sparrow	336	421	757
Tree Sparrow ...	85	222	307

Annual Record

1949: 1,566, of 63 species
1950: 1,122, ,, 60 ,,
1951: 1,150, ,, 49 ,,
1952: 1,672, ,, 59 ,,
1953: 1,096, ,, 51 ,,
1954: 1,337, ,, 52 ,,
1955: 755, of 43 species
1956: 791, ,, 43 ,,
1957: 824, ,, 47 ,,
1958: 1,289, ,, 53 ,,
1959: 1,545, ,, 52 ,,
1960: 1,132, ,, 47 ,,

1961: 3,044 of 54 species

1949-1961: 17,323 of 110 species

SPALDING BIRD OBSERVATORY

The observatory, which is at the Spalding Sugar Factory settling ponds, was established in May 1961 in order to study inland migration. The ponds are situated one mile N.E. of Spalding, adjacent to the tidal R. Welland, and cover 36 acres.

Many migrants are attracted to the ponds, the banks of which are 30 feet high. Apart from a Reed Warbler colony there is a low resident population. This makes the site ideal for recording even the slightest fluctuation in numbers and for ringing migrants—mist nets being most suitable.

Between May and December, 1961, 123 species were recorded at the observatory.

E. J. Redshaw.

MIGRATION AT SPALDING BIRD OBSERVATORY

June

Waders seen during the month were, a Snipe on 19th, two Dunlin on 23rd, two Common Sandpipers on 23rd/25th, two Green Sandpipers on 25th/30th and a Curlew on 30th. Also on 30th there was a light movement of Lapwings to the east, and in the evening two small parties of Swallows left the area; one to the north and the other to the west.

July

Very little movement until the end of the month, a Chiffchaff on 11th, and a Lesser Whitethroat on 20th being the exceptions. A Kestrel appeared on 20th, and another on 24th. Single Ringed Plover were present from 20th, and on that day a Wood Sandpiper was recorded. On the 24th a Snipe was present. Small numbers of Swallows were moving S.W. and a Spotted Flycatcher was seen at the nearby Sewage Works, also on 24th. On 29th the autumn passage began in earnest and the following were recorded: two Ringed Plover, a Curlew, a maximum of 16 Common Sandpipers (up to six regularly present during the month with three Green Sandpipers), Redshank, two Curlew Sandpiper, two Turtle Doves, light movement of Swallows, Sand Martins and Swifts, a Stonechat, and 17 Yellow Wagtails.

August

Two Ringed Plovers, two Ruffs, and 12 Common Sandpipers were present on 2nd; numbers of the latter species then decreased to the end of the month. An Oystercatcher, Arctic Skua, C/A Tern, and 36 Rooks appeared on 5th, the Rooks moving to S.E. On the 9th, two Kestrels, three Curlews, Greenshank, Dunlin, a 'red' Curlew Sandpiper, and Ruff were present, and a movement of Swallows, Sand Martins and Swifts increased (Swifts reached a maximum of 600 per hour to S.W. on 16th). Other species seen on 9th were

Wheatears, Whinchats, Reed Warblers and Whitethroats. On 12th 28 Whitethroats, nine Spotted Flycatchers, and nine Turtle Doves were recorded. Five Curlews, and 120 Blackbirds were present on 15th. On 23rd there were two Sandwich Terns which departed S.W.; by this time numbers of Swifts had decreased considerably. On 26th a Redstart, and Grey Wagtail were noted, and the first party of Meadow Pipits arrived. Curlews, Whimbrels, Black-tailed Godwit, and Redshank appeared on 28th, and on that day Whinchats reached a maximum of 35. Also recorded on 28th were Redstarts, Reed and Sedge Warblers, Whitethroats, Spotted Flycatchers, and an increase in numbers of Meadow Pipits and Yellow Wagtails. By now Swift movement had ceased. On 31st House Martins were recorded flying N.W., and two Turtle Doves were seen.

September

Two Common Terns, a Fieldfare, 45 Song Thrushes, and 15 Whitethroats were noted on 2nd, and on 3rd the Fieldfares had increased to 40, though numbers of Thrushes and Whitethroats were low. Single Dunlin, Turtle Dove and Nightingale moved through on 6th, by which time Sand Martin movement had finished. A Jay and five Yellow Wagtails occurred on 8th. On 9th a Great Tit, four Whinchats, Reed Warbler and Chaffinch were recorded, and 44 Lapwings passed over to N.E. Six Robins appeared on 12th and a small party of Meadow Pipits arrived. On 14th numbers of Dunnock increased slightly. On 15th a 'hawk' movement developed with a maximum of six Kestrels, and up to two were seen until 21st. A Sparrowhawk passed through on 16th. Also present on 15th were single Whimbrel and Great Spotted Woodpecker. The 16th brought two Common Terns, a Little Tern, and a S.E. movement of Skylarks. Numbers of Meadow Pipits and Pied Wagtails increased and 200 of the former passed S.W. in an hour during the early morning of 16th. A Red-throated Diver was present on the nearby R. Welland on 16th. During the latter part of the month pipits and wagtails were moving S.E. On 18th two Turtle Doves and two Redwings were recorded; and two Swifts on 21st. By 22nd numbers of Snipe had increased slightly and two Spotted Redshank, a Ruff, and three Black Terns were present. Early morning on 21st had brought an influx of five Great and 18 Blue Tits, and four Redpolls; on 22nd 15 Blue Tits were still present and immigrants during the morning were, 50 Blackbirds, 30 Robins, two Goldcrests, and a Yellow Wagtail. All the Tits and Robins had moved on by the next day. A Great Spotted Woodpecker was seen on 25th, a Whinchat on 28th, and a Reed Warbler and five Wheatears on 29th.

October

Species recorded on 1st were a Snipe, a Curlew, two Wheatears, three Stonechats, two Redstarts, and a female Red-breasted Flycatcher. Hirundine movements had almost finished by the beginning of the month apart from a trickle of Swallows which continued until 14th.

On the afternoon of 7th two parties of Lapwings passed over, one to S.E., the other to the W., and a Long-tailed Skua was seen soaring high above the cooling towers. On 10th a single Kestrel was present, also on 16th and 22nd, and a Yellow Wagtail which remained until 14th. A Redwing seen on 12th was the first of the winter; also seen were four Stonechats and a Redstart. Up to three Stonechats were present until the end of the month. On 14th a Grey Wagtail and a small party of Chaffinches arrived. Starling movement to S.W. was detected on 12th and 22nd. Also on 22nd a Ringed Plover, 16 Dunlin, a Sanderling, and 400 Redwings arrived. By 26th numbers of Snipe had increased to 22 and a Jack Snipe was recorded; a Green Woodpecker and a party of 37 Jackdaws flew south. Five Redshanks and a Grey Wagtail were present on 27th. On 28th a small party of Lapwings flew west and two Dunlin were seen. A Rock Pipit occurred on 29th.

November

Small numbers of Lapwings were still moving west and north-west during the beginning of the month. On 4th up to 60 Dunlin were recorded, also a Hooded Crow, Marsh Tit, a strong westerly movement of Fieldfares and Redwings, a small influx of Blackbirds, Dunnocks, Linnets, Redpoll, Chaffinches, two Bramblings and Reed Buntings. Two Stonechats were present on 4th and single birds were seen until the end of the month. On 11th a Kestrel was hunting in the area, numbers of Dunlin had increased to 120, and Fieldfares were still moving west. On the 19th there were 200 Dunlin and 10 Redshanks on the muds, and by 24th Snipe had decreased to 12. Another Kestrel was seen on 25th and another small influx of Blackbirds occurred. The most interesting item of 25th was the arrival of a flock of 150 Greenfinches which departed S.W. after resting in the hawthorn bushes for a short time.

December

On 3rd numbers of Snipe had increased to 15, but numbers of Dunlin had dropped as low as two. Interesting records for the day were, a Pintail, a Peregrine, a Great Spotted Woodpecker, a Rock Pipit, and two Grey Wagtails. On 9th Dunlin had increased to 100 and there appeared to be a light southerly movement of Skylarks. The 17th was a good day with two Bewick's Swans, 16 Redshanks, 300 Dunlin, a Short-eared Owl, and a Kingfisher. A Rock Pipit was still present on 17th and 30 Chaffinches were noted. By 23rd hard weather had set in and small numbers of Teal and Wigeon were present. Other records for 23rd were, a Grey Plover, two Herring Gulls, a Little Owl, three Long-tailed Tits, a Grey Wagtail, 45 Chaffinches, three Bramblings, four Redpolls, and a flock of 160 Linnets which were roosting in the reed beds.

MIGRATION AT THE SUGAR FACTORY SETTLING PONDS BARDNEY

April

Passage recorded during the month was limited to several Curlews and Redshanks on 5th and a Ringed Plover and Dunlin on 14th. Two Swifts appeared on 30th.

May

Although several Redshanks and Dunlins were present on 1st it was not until 14th that any noticeable passage took place, when a Common Sandpiper, two Wood Sandpipers and four Black Terns occurred. The tern movement continued until 18th, and waders on 23rd were two Ringed Plovers, eight Wood Sandpipers and Redshanks, and five Dunlins.

June

Waders were few throughout the month but included a Green Sandpiper on 17th and 20th, Ringed Plovers on 8th and 19th and a Spotted Redshank on 20th. There was a Black Tern on 17th and two Pintails on 19th.

July

Passage began early in the month with small numbers of Ringed Plovers, Snipe, Green Sandpipers, Common Sandpipers and Dunlins. Numbers steadily increased during the following week. New arrivals were Spotted Redshanks on 8th and 15th, a Little Ringed Plover, Greenshank, seven Ruffs, two Whinchats and five Turtle Doves on 13th. There was a Little Ringed Plover on 16th and nine Turtle Doves flew to S.W. A Slavonian Grebe, a new species for the ponds, was present from 21st to 25th. Three Little Stints and a Curlew Sandpiper occurred on 22nd and next day three Common Arctic Terns, and a Cuckoo flew to S.W. There were eight Snipe and two Little Ringed Plovers on 25th, and a Black-tailed Godwit had arrived by 29th. Passage increased next day and waders recorded were two Ringed Plovers, two Little Ringed Plovers, 12 Snipe, a Black-tailed Godwit, two Green Sandpipers, three Common Sandpipers, three Greenshanks, 18 Dunlins and five Ruffs.

August

Passage intensified during the first week, when in addition to numbers of Ringed Plovers, Snipe, Green and Common Sandpipers, Dunlins and Ruffs were several Common Arctic Terns, two Little Terns, four Turtle Doves and a female Scaup. On 6th large numbers of Swifts and Sand Martins flew to S.W. over the ponds. The movement continued until noon and included smaller numbers of House Martins, Turtle Doves, a Curlew and several Snipe. 22 Black Terns occurred on 8th, 10 remaining next day. Fresh peaks of waders were reached on 9th

with 30 Snipe, 10 Green Sandpipers, 10 Common Sandpipers, a Spotted Redshank, three Greenshanks, nine Dunlins, six Ruffs; four Common/Arctic Terns arrived and a Lesser Black-backed Gull flew to S.W. A Greater Black-backed Gull occurred on 15th, and two Garganey on 20th; an Oystercatcher, a Golden Plover and a Greater Black-backed Gull flew to S.W. Waders included five Curlew Sandpipers (still present on 26th), 20 Ruffs, a Little Stint and four Black-tailed Godwits. Numbers of waders remained fairly constant until the end of the month; new arrivals included Temminck's Stint on 27th, an early Goldeneye on 27th and two Black Terns on 29th.

September

A Greenshank and three Spotted Redshanks occurred with the other waders on 1st; several Whinchats had arrived on 3rd followed next day by a small influx of Robins, when a Kestrel, a Sanderling and a Black Tern were newly arrived. Nine Little Ringed Plovers and the only Wood Sandpiper of the autumn occurred on 10th, but by 16th the only waders present were two Ringed Plovers, two Snipe, Common Sandpiper, 17 Dunlins and five Ruffs. Three Ruffs were still present on 28th.

October

Waders were few during the month, but included a Ringed Plover, several Snipe, a Little Stint on 8th, 16 Dunlins and three Ruffs up to 22nd. A south-westerly passage of Skylarks took place on 8th.

November

Six Bewick's Swans stayed from 1st to 19th, a Goldeneye was recorded on 14th and 19th, and a Long-tailed Duck on 14th. Another new species for the ponds, a Velvet Scoter, was present on 19th.

MIGRATION AT LOW FARM, TETNEY AND NORTH COATES

January

Lapland Buntings were recorded during the first week and 20 Snow Buntings were counted on 11th. Lapwings increased to 400 in cold weather on 22nd, and a Woodcock was recorded on 29th.

February

5,000 Knots were recorded on 5th and 11 Hooded Crows on 26th.

March

Numbers of Golden Plovers increased to 800 by 5th but had dropped to 100 by 12th; 100 Lapwings flew S.E. on 5th. On 3rd 18 White-fronted Geese occurred and next day a Green Sandpiper, Jack Snipe and three Short-eared Owls; 23 divers, 200 Scoters, 17 Velvet Scoters flew northwards, and three Great Crested Grebes southwards. There was a Stonechat on 5th, a Kittiwake on 8th and five Goldcrests on 12th.

On 13th Meadow Pipits were moving northwards and a westerly passage of Linnets took place. Four Wheatears occurred on 25th, and more Linnets and pipits were on the move from 23rd to 28th. 100 Fieldfares were recorded on 26th and seven Wigeon on 29th.

April

Goldcrests and 12 Wheatears were present on 6th, and six *Phylloscopus* warblers on 9th, all occurring with fresh S.E. winds. The first Sand Martin, Whitethroat and Ring Ouzel were recorded on 16th when two Willow Warblers, 21 Fieldfares and two Mistle Thrushes also occurred. Small numbers of Goldfinches flew S.W. from 20th to 25th. Two Black-tailed Godwits were seen on 19th and the first Whimbrel on 22nd; on the same day six Eiders and a Hooded Crow came in off the sea, two Brent Geese and several Yellow Wagtails were recorded. A fall of migrants next day included several Chiffchaffs, Willow Warblers, Whitethroats, two Lesser Whitethroats, and a Cuckoo. A Turtle Dove flew northwards on 24th, and an increase in Sedge Warblers and Whimbrels was noted on 30th.

May

Migrants on 7th were Little Terns, Swifts, Redstart and Whinchat, and on 28th 20 Turtle Doves, three Cuckoos and a Common Sandpiper.

June

A peak of 13 Turtle Doves on 25th, and a Redstart on 27th.

July

60 Golden Plovers and a Green Sandpiper arrived on 23rd, and Whimbrel, Bar-tailed Godwits, Common Sandpipers, Sanderling, Grey Plovers and Knot had increased by 30th. On the same day 16 Sandwich Terns, five Arctic Skuas, Great Crested Grebes and two Eiders were recorded.

August

There was a slight increase in numbers of Blackbirds early in the month, Turnstones arrived and eight Turtle Doves occurred on 6th. 10 Eiders were recorded on 19th and a marked increase in waders was noted including Golden Plovers, Greenshanks, Ruffs, Spotted Redshanks and Snipe. Sandwich Terns numbered 100 on 26th and a Common Tern was seen. Numbers of wildfowl had increased by the end of the month and an early Fieldfare occurred and a Marsh Harrier was seen. A Nightingale was recorded on 30th.

September

Six Pied Flycatchers and two Redstarts arrived on 3rd. There were exceptional movements of Dunnocks on 17th and 24th and on 24th they were recorded leaving the area to S.W. On the same day Greenfinches and House Sparrows were very numerous.

October

There was a Stonechat and a Black Redstart on 1st and a Marsh Warbler (the first record for Lincolnshire) on 8th, and a late Swift on 11th. Arrivals of Redwings and Fieldfares took place on 21st/22nd and a Gadwall occurred. Migrants on 28th/29th were Song Thrushes, Blackbirds, Long-tailed Tits, Siskins, Lapland Bunting, Wheatear and Redstart.

November

A N.W. passage of Fieldfares occurred on 4th, and three Little Auks and a Redpoll were recorded. Next day at least 4,000 Blackbirds were estimated in the area. There was a fall of Goldcrests on 11th/12th and Wrens were numerous. Nine Short-eared Owls were recorded on 12th and the following weekend a Bittern and Eiders were seen.

December

A N.W. passage of Woodpigeons took place the first week and Redwings, Fieldfares and Wrens increased on 10th and a Great Northern Diver was recorded. A hard weather movement occurred during the last few days of the month involving many Redwings, Fieldfares and Song Thrushes.

NESTING SITES FOR KESTRELS

by John H. Davey

The Kestrel is by nature a cliff nesting species, but on the flat lands it makes do with the old nest of crow or magpie, or a shelf or small hollow in a tree if available.

When wild winds prevail, as during the past winter when most nests were blown out, the Kestrel is hard pressed, as it seems incapable of building a nest for itself.

Fifty years ago a pair nested in a box which I placed high in a tree—about forty feet is a favourite height; a box of a cubic foot with the upper half of one side left open for an entrance, with an extra four inches in the roof abutting over the entrance to keep out the weather, with perhaps extra shelter of side boards, will attract the Kestrel, and I have seen the birds obviously in possession of such boxes in September remaining in the vicinity through the winter and laying eggs early in April.

Boxes should be placed in big trees inaccessible to climbers, not much less than a hundred yards from human dwellings, preferably in an avenue away from a road, so that the young have refuge in the first days of flight, but a single big tree will do; care should be taken to fix the box in such a way that the young Kestrels can step out on to moderately thin branches to do their wing flapping exercises—if the boxes are fastened on bare tree trunks there will be casualties through the young falling out before they can fly.

Even more similar to their native cliffs is the chimney of a derelict house, well away from a road; jackdaws sometimes stop up these chimneys to be afterwards used by Owls and Kestrels, but it is a simple operation to stop up a chimney with bricks, finishing off with plenty of old sacking well hammered down, leaving a cavity two feet deep—first remove the chimney pot.

SELECTED RINGING RECOVERIES

m—male f—female n—nestling

Ringed	*Recovered*
Mallard	
f, Peakirk, 30.8.60	6.12.60, Rauceby (WMP).
Garganey	
1st w.f., Haarsteeg, Noord-Brabant, **Holland**, 4.9.56	4.9.58, Lincoln (BTO).
Gadwall	
f, Deeping St. James, 8.1.57	16.9.60, Welbeck, Worksop, Notts. (BTO).
Pintail	
m, Deeping St. James, 21.3.56	winter, 1960/61, Vught, Noord-Brabant, **Holland** (BTO).
Pochard	
m, Deeping St. James, 26.12.56	—.2.60, Great Haywood, Staffs.
m, Deeping St. James, 5.2.57	4.12.60, Ferrybridge, Dorset (BTO).
Sheld Duck	
n, Poole Harbour, Dorset, 25.7.56	23.12.60, Saltfleet (BTO).
Canada Goose	
ad, Osmaston, Derby, released Rivington, Lancs., 2.6.57	—.8.60, Holbeach Marsh
juv., Stapleford, Leics., released Frampton-on-Severn, Glos., 26.6.53	11.7.56, Frampton-on-Severn 6.5.61, Riseholme (BTO).
Lapwing	
ad, f, Reeuwijk, **Holland**, 10.3.54	7.12.58, Grasby (BTO).
Woodcock	
n, Hurdal, Akerhus, **Norway**, 18.6.59	16.1.60, Sutton Bridge.
f.g., Mellum, **Germany**, 2.4.60	22.12.60, East Ravendale (BTO).

Common Sandpiper

Abberton, Essex, 13.7.61	23.7.61, Tetney (CDN).

Redshank

f.g., Holbeach Marsh, 1.9.58	5.7.60, Easingwold, York.
1st w., Terrington Marsh, Norfolk, 18.8.59	2.7.60, Scunthorpe (BTO).

Dunlin

f.g., Ledskär, Lönsta, **Sweden**, 6.7.59	26.8.60, Dawsmere
f.g., Ledskär, **Sweden**, 30.8.60	26.9.60, GP.
ad, Ottenby, **Sweden**, 28.7.58	10.8.60, Holbeach Marsh.
ad, Ottenby, **Sweden**, 3.8.58	11.8.60, Holbeach Marsh.
ad, Ottenby, **Sweden**, 9.7.59	10.8.60, Holbeach Marsh.
ad, Ottenby, **Sweden**, 18.7.59	26.8.60, Dawsmere.
f.g., Revtangen, **Norway**, 13.9.55	26.8.60, Dawsmere.
f.g., Revtangen, **Norway**, 6.10.58	26.8.60, Dawsmere.
f.g., Amager, **Denmark**, 27.9.59	10.8.60, Holbeach Marsh.
f.g., River Humber, 9.9.59	27.7.60, North Sea, between Ostend and Grimsby (BTO).

Sanderling

f.g., Revtangen, **Norway**, 16.9.59	5.5.60, Tetney Lock (BTO).

Great Black-backed Gull

n, Utsira Island, Rogaland, **Norway**, 6.7.52	winter, 1952/53, Cleethorpes (BTO).

Woodpigeon

n, Friskney, 16.8.59	—.1.60, Gourin, Morbihan, **France** (CTB).
n, Friskney, 16.8.59	27.3.61, Friskney (CTB).
n, GP, 7.9.61	22.2.62, Skegness (BTO).

Short-eared Owl

n, Barr, Ayr, 8.5.56	24.7.60, South Elkington (BTO).

Swift

21 birds, retrapped in Sleaford during 1961, had been ringed in the same area: 7 in 1958, 12 in 1959 and 2 in 1960. (WMP).

Great Spotted Woodpecker

f.g., GP, 8.10.61	14.10.61, North Cockerington (BTO).

Swallow

juv, nr. Sleaford, 10.9.60	28.10.60, Zaoviet Reggan, **Algeria** (LC).
juv, Scredington, 22.8.60	17.9.61, Stribbington, Hunts.
juv, Scredington, 2.9.60	2.6.61, Northowram, Halifax, Yorks.
juv, Scredington, 30.8.60	29.7.61, Dunston.
juv, Scredington, 12.9.60	14.5.61, Tetney Lock.
ad, Sleaford, 5.5.61	11.5.61, Spalford, Tuxford (WMP).
juv, Scredington, 27.8.60	30.7.61, Burnham Market, Norfolk (LC).

House Martin

Four birds, retrapped in the Sleaford and South Kyme area during 1961, had been ringed in the same area: 1 in 1959, 2 in 1960 (WMP).

Sand Martin

ad, nr. Seahouses, Northumberland, 20.7.60	26.8.60, Barton-on-Humber.
juv, Addingham, Yorks., 9.7.60	13.8.60, Sutton Bridge (BTO).
juv, Burton Pedwardine, 29.7.60	26.6.61, Middleton, King's Lynn, Norfolk (WMP).

Magpie

juv, Tetney, 25.5.61	11.11.61, Horncastle (CDN).

Blue Tit

f.g., GP, 8.10.61	15.11.61, Boston (BTO).

13 birds, retrapped Sleaford during 1961, had been ringed in the same area, 2 in 1957, 3 in 1958, 3 in 1959 and 5 in 1960 (WMP).

Song Thrush

GP, 16.10.60	21.11.61, Marmolejo, **Spain**
GP, 24.9.59	—.—.60, Paterna de Rivera, Cadiz, **Spain** (BTO).
GP, 9.9.59	6.3.62, Stickford.
GP, 29.9.60	6.3.62, Almadien, **Spain**
GP, 8.10.61	1.2.62, Le Porge (Gironde), **France** (BTO).
juv, Colsterworth, 15.8.59	4.2.60, Villaviciosa, **Spain** (LC).

Ring Ouzel

GP, 17.9.59	26.2.62, Oujda, **Morocco** (BTO).

Blackbird

GP, 1.11.59	14.3.61, Karvicszerice, Sianow, **Poland** (the 1st British-ringed Blackbird in Poland).

GP, 5.11.61	18.11.61, Holmesfield, Sheffield. 28.12.61, Ballinspittle, Kinsale, Cork, **Eire.** 29.12.61, Irishtown, Claremorris, Mayo, **Eire.** 30.12.61, Greenhill, Bonnybridge, Stirling. 30.12.61, Navenby. 2.1.62, Bodorgan, Anglesey. 3.1.62, Kiltimagh, Mayo, **Eire**. 7.1.62, Linwood, Market Rasen. 22.2.62, Emneth, Wisbech. 24.3.62, Copeland Island, Co. Down, **Eire.** 27.3.62, Line, Bryne, Rogaland, **Norway.** 7.4.62, Björnlunda, (Söderman-land), **Sweden.**
GP, 31.10.59	12.3.62, Tömmervik, Island of Stord, (Hordaland), **Norway**
GP, 31.10.60	6.2.62, Causeway, Listowel, Co. Kerry, **Eire** (BTO).
ad, m, Tetney, 5.2.61	18.10.61, Viborg, Jutland, **Denmark** (CDN).
Wheatear	
GP, 21.8.60	4.9.61, Contis, St. Julien-en-Born, **France** (BTO).
Robin	
GP, 27/28.10.60	6.4.61, Amager, **Denmark** (BTO).
Whitethroat	
GP, 6.9.60	15.5.61, Polmont, Grangemouth, Stirling
GP, 28.8.61	4.10.61, Rota, Cadiz, **Spain** (BTO).
Dunnock	
GP, 12.9.61	22.9.61, Holme, Norfolk.
GP, 28.8.61	27.11.61, Colchester, Essex (BTO).
f.g., Spurn Point, 27.9.61	15.10.61, Low Farm, Tetney (CDN).
Starling	
GP, 19.9.60	12.5.61, Toynton St. Peter, Spilsby (BTO).
f, Sleaford, 19.2.56	10.4.60, Ostrov, Pskov, **U.S.S.R.**
m, Sleaford, 8.2.59	12.5.61, Oldeboorn, Friesland, **Holland** (WMP).

f.g., Hardwick (roost), 20.11.57	4.12.61, Sanderstead, Surrey (RKC).
f.g., Lincoln, 24.2.61	11.6.61, Geesthacht, Schleswig-Holstein, **Germany** (ADT).
1st w. f., Tetney, 18.9.60	1.1.62, Goole, Yorks. (CDN).
ad, m, Fristad, Västergötland, **Sweden**, 24.4.60	20.10.60, North Kelsey (BTO).
ad, f, Lincoln, 11.1.59	18.1.62, West Bromwich (ADT).

Bullfinch

GP, 3.1.61	2.4.61, Hagworthingham (BTO).

House Sparrow

f.g., m, Tetney, 18.12.60	11.4.62, South Ferriby (CDN).

Tree Sparrow

f.g., GP, 28.10.61	18.4.62, Ellerton, Yorks. (BTO).

GENERAL BIRD REPORT

The following have contributed observations:

E. I. Abell
J. S. Ash
F. L. Ashworth
K. Atkin
C. L. Batty
C. T. Beverley
S. van den Bos (SB)
R. Bowers
Cambridge Bird Club
L. Cave
H. Cawthorn
P. Cawthorn
J. Chambers
A. E. Clark
F. Coates
F. Codling (F-C)
B. Cole
C. Colebrook
Nature Conservancy
R. V. Collier
L. Cornwallis (L-C)
R. K. Cornwallis
E. Cowley
A. Credland
D. A. Darlison
A. W. S. Dean
W. Earnshaw
L. Lloyd-Evans
J. D. Foster
J. A. Galletly
J. Geeson
E. J. Gibbons
D. B. Gill
P. E. Gipps
M. C. Gray
A. Greenfield
G. C. Hall
G. N. Halliday
J. S. Harrison
A. Hill
R. Holmes
M. C. Hopwood
E. Howson
C. A. Johnson
J. Kennington
C. A. E. Kirtland
G. F. Leachman
J. Loft
J. Marshall
R. May
G. Molsom
Cleethorpes & District N.F.C. (CDN)
Hull Field Naturalists

O. S. Nelthorpe
R. K. Norman
F. Norris
C. L. Ottaway
B. S. Pashby
W. M. Peet
R. E. M. Pilcher
G. R. Porter
Z. Porter
B. A. Pye
E. J. Redshaw
Humber Wildfowl Refuge
J. S. Rivers
D. Robinson
K. Robinson
E. A. Rowland
D. Rushby
Carre's Grammar School
A. D. Scott
C. J. Smale
E. C. Stubbs
O. V. Spurrier
R. K. Summerfield
A. Sykes
E. J. Thomson
A. D. Townsend
Wildfowl Trust
C. M. Walker
D. West
H. West
K. E. Wilson
R. Winslow
J. Wood
E. V. Wray
J. M. B. Young

1. Black-throated Diver. Holbeach, 29/10 (CBC).

2. Great Northern Diver. Humber, 10/12 (CDN). GP, 16/12.

4. Red-throated Diver. GP, 12, 29/1; 26/3; 5, 23/9; 15, 24/9; 5, 8/10. R. Welland, Spalding, 16/9 (EJR). Holbeach, 3/12. Benington, 3/12 (CBC).

5. Great Crested Grebe. *Breeding records:* Killingholme, new site (JK, RM); Lindholme, two broods (ADS); Burton G.P.; Lincoln L.N.E.R.; Skellingthorpe Pits; Kirkby-on-Bain; Tattershall pits (EIA, THW, ADT); Sleaford pits; Culverthorpe; 2 pairs, Denton (CGSch, LC). 9 grebes, Tallington pits; none bred (JAG). GP.

6. Red-necked Grebe. Brocklesby, 20/10 (RM).

7. Slavonian Grebe. Barrow-on-Humber, 31/12 (HFN). Lambert Hill Pond, 20-22/10 (RM, SB, DR). Bardney, 21-25/7 (ADT).

9. Little Grebe. *ca.* 114, Killingholme during winter, where adults feeding young, 29/10 (RM, EH). GP.

16. Manx Shearwater. 2, flying up Humber, 11/6 (CJS). GP, 23/8.

27. Gannet. GP, autumn peaks, 45, 6/9; 75, 8 10; 500, 18/10. 30, Holbeach, 19/10 (CBC).

28. Cormorant. *Inland record:* Grimsthorpe, 17/9 (ECS). GP.

29. Shag. Boston, 3, 8/10; Holbeach, 30, 19/10 (CBC). GP.

30. Heron. Occupied nests: Muckton, 13; Willoughby, 37; Troy Wood, 52; Evedon, 18; Deeping, 59 (GRP, CBC). GP.

38. Bittern. Recorded Barton-on-Humber, but breeding not proven (HFN). Bishopthorpe, 26/11 (CDN). GP, 28 8. Deeping St. James, 12/9 (REMP).

42. Spoonbill. 2 flying S.E. Freiston, 24/9 (CBC).

45. Mallard. H-W Ref: 3,200, 18/12 (NC). Brocklesby, 600, Nov.-Dec. (KR, RM, SB, DR, JK). Lambert Hill pond, 900, 20 12 (JK). Tetney marsh, 420, Aug. (CDN). Laughton, 560, 12 11 (FC). Corringham, 600, 15/10 (RB). GP, 1,000, 21 10. Grimsthorpe, 800, 15/10 (ECS).

46. Teal. Bred Bardney, new site (ADT). H-W Ref., 770, 27 9 (NC). 1,000, Holbeach, 19/10 (CBC).

47. Garganey. Barrow Haven, 23 4 (HFN). R. Glen, Baston, 28/5 (EJR). Bardney, 2, 20/8; 21/8 (ADT).

49. Gadwall. Barrow Haven, 5 during Aug. (HFN). North Coates, 21/10 (CDN). Lambert Hill pond, 3, 26 11. Newsham Lake, 9/8 (RM, EH, SB, WE). Lincoln L.N.E.R. pit, 2 12 (DW). Frampton, Sept. Holbeach, 2, 6/8 (CBC).

50. Wigeon. H-W Ref., 1,500, 18/12 (NC). 200 flying west along R. Humber, 24/9; Goxhill, 650, 24 9 (HFN). North Coates, 300, 15 12 (GCH). Lincoln L.N.E.R. pit, 10 pairs, 7 3 (KR). Grantham S.F., 250, 25/1 (EIA, THW). Holbeach, 4,000, 7 12 (CBC). GP, 20 8 (early date); 5, 28/8; 300 during Dec.

52. Pintail. Barrow Haven, 2, 24 9 (HFN). Croxby Pond, 1 5 (GCH). Lambert Hill Pond, 12 during Oct. Tetney Haven, 2, 19 11 (KR, RM, SB, DR). Huttoft pit, 18/9 (ADT). GP, 16 3; 4, 23-24 9; several Oct. Bardney, 2, 19 6 (DW). Boston Point, 4, 19 11. SBO, 3/12 (EJR). A pair Holywell, Jan.-April (LC). Holbeach, max. 29, 23/9 (CBC).

53. Shoveler. Several pairs bred Bardney; 50 there during Aug. *Recorded:* Lambert Hill Pond, Laughton, Lincoln L.N.E.R. pit, Grantham S.F., Grimsthorpe, Langtoft, Holbeach, Dawsmere (RM, SB, DR, ADT, DW, LC, FC, CBC). GP.

55. Scaup. Barrow Haven, 26 11 (HFN). Killingholme Haven, 4, Oct. and Nov. Grimsby Docks, up to 4 during Dec. Chapel Point, 23/9; 3, 27/12. North Coates, 3, 27 12. Bardney, 2 8. Sleaford pits, 4 3 (ADT, CMW, RKN, EC, RM, SB, DR, JK, CDN). GP.

56. Tufted Duck. *Breeding:* Lindholme Lake (ADS); Bardney, 2 pairs (new site) (ADT, RM, SB, DR, JK). *Winter max.:* Laughton, 150 (FC). Lincoln L.N.E.R. pit, 50 (DW). Grimsthorpe, 50 (ECS). G.P.

57. Pochard. *Breeding:* Scawby; Greetwell; Lincoln L.N.E.R. pit, 3 pairs; Bardney (new site) (EIA, THW, ADT, RM). *Winter max.:* Killingholme brick pit, 80 (RM). South Killingholme pond, 50 (KR). Lincoln L.N.E.R. pit, 145 (DW). Sleaford pits, 80 (CMW). There was a sharp increase nationally in wintering Pochard. GP.

60. Goldeneye. Numerous winter records from Killingholme Haven pit (12, Nov.). Barrow Haven, Lambert Hill Pond, North Coates, Chapel Point, Sandilands pit, Lincoln L.N.E.R. pit, Bardney, Sutton Ings, Sleaford, Tallington, Langtoft (9, 18/2) (EIA, THW, GCH, CDN, ADT, DW, DR, RM, JK, SB, WE, CBC, KR, CDN, RVC). GP.

61. Long-tailed Duck. Grimsby Docks, 14/11-14/12 (EC). North Coates, 3, 5/11 (GCH). Chapel pit, 26/11. Wrangle, 12/11 (CBC). *Inland record* (it is exceedingly rare so far inland): Bardney, 14/11 (EIA, THW). GP.

62. Velvet Scoter. North Coates, 12, 17/12; 9, 14/1 (GCH). Humber, 17, 14/3 (CDN). GP, 5, 4/11. *Inland record* (it is extremely rare inland): Bardney, 19/11 (GFL, KA).

67. Eider. H-W Ref., 13, 22/10 (NC). R. Humber, recorded on eight occasions April-Dec., max. 10, 19/8 (CDN). GP, 2, 30/7; 3, 18/11; 32, 25/12. Welland Estuary, 4, 20/11; 13/12; 8, 17/12 (CBC).

69. Red-breasted Merganser. North Coates, 2, 17/12 (CDN). Donna Nook, 3, 25/4. Chapel Point, one flying north, 15/7 (RKN). GP, 2, 3/4; 16/4; 2, 4/11. A merganser chick (still in down) killed by a dog, Castle Dyke Bank drain, late July (PC). The observer saw the brood with an adult but failed to stop the dog before it pounced. This is the first breeding record for Lincolnshire and the furthest south in the British Isles.

70. Goosander. H-W Ref., 4, 7/9 (NC). Lambert Hill Pond, 5, 29-30/1 (JK, RM). Tattershall pits, 2, 21/2. Burton G.P., 23/2 (GFL, ADT). Wrangle, 17/1 (CBC). Langtoft G.P., 2, 29/1; 18/2; 11/3 (RVC).

73. Sheld Duck. Reads Island, 900, 9/11 (HFN). Bardney, 9/8 (EIA, THW, ADT). Grantham S.F., 2, 11/4; 2, 22/4; 20/5 (CLB, LC). Holbeach, 1,500, 17/12 (CBC). *Inland breeding:* Kirkby-on-Bain, Langtoft G.P. (ADT, EIA, THW, CBC). GP.

75. Grey Lag Goose. H-W Ref., 37, 21/9 (NC). North Coates, 2/12; 7, 9/12 (CDN). GP, 11, 28/9. Grimsthorpe, 17/9; 150 flying west, 18/1 (ECS).

76. White-fronted Goose. R. Trent/Humber confluences, 23, 18/2 (RH). H-W Ref., 5, 23/10 (NC). North Coates, 18, 3/3 (CDN). GP, 11, 29/1; 4, 25/11; 4, 16/12; 13, 28/12. Holbeach, 5, 17/12 (CBC).

78. Pink-footed Goose. *North-east Lincolnshire.* H-W Ref., max.: 5,000, 3rd week Oct. (NC). Elsham Wolds, 1,500 (RM). 2,000 Worlaby, 28/10 (KR). *North-west Wash.* GP, 800, 14/10; max.: 3,500, late Oct. *South-west Wash.* Holbeach, 3,000, 3/11 (CBC). The second national census organised by the Wildfowl Trust, 12/11, resulted in a total of 5,520 for Lincolnshire.

80. Brent Goose. Much more numerous than for many years. Grainthorpe Haven, 18, 19/12 (RM, SB, DR). North Coates, 14+, 12/2; 8, 11/3; 2, 22/4; 3 flying up R. Humber, 29/10 (DBG, GCH, DR, CDN). GP, 30+, 29/1; 9, 15/3; 5/4; 40, 5/11; 7, 26/12. South-west Wash. max.: 5,000, 12/11. Benington, 3,500, 19/11 (CBC).

81. Barnacle Goose. Holywell, March and April (LC). Grimsthorpe, 11/3; 12/11 (ECS).

82. Canada Goose. Lambert Hill Pond, 6 introduced birds present throughout the year (KR). Grimsthorpe, max.: 250, 17/9 (ECS). *Coastal:* North Coates, 9/7 (CDN). Dawsmere, 2, 26/8 (CBC).

84. Mute Swan. In the national census of breeding Mute Swans 84 pairs were recorded in Lincolnshire as against 106 in 1955:

	1955	1961
Isle of Axholme	5	1
Trent Valley	3	–
Ancholme Valley	2	2
Coastal strip Barton-Grimsby	6	4
Coastal strip Grimsby-Wainfleet	12	12
N.W. Lindsey	2	1
Wolds	7	6
Lincoln area	25	14
S.W. Kesteven	15	5
Central Kesteven	8	9
Holland	21	30

About 200 non-breeding birds were recorded. The decline in breeding pairs is possibly due to the destruction of 80 badly oiled swans on the Brayford pool, Lincoln, during 1960.

85. Whooper Swan. Humber, 5, 29/10 (HFN). Barton Haven, 3, 18/11 (RH). Tetney, 18/12; 27 flying N., 7/12 (CDN, CJS). GP, 2, 23/3; 2, 24/4; 4, 15/12; 6, 26/12. Burton G.P., 4, 12/11-25/12 (EIA, ADT, DW). Two parties over New York, 29/12 (PC). Holbeach, 8 flying W., 17/12 (CBC).

86. Bewick's Swan. Barton-on-Humber, 18/11 (JSH). Killingholme, 6, 22/1; 14, 29/1; 5, 10/2 (DBG, GCH, JK, WE, SB, DR, CC). Brocklesby Park, 25, 17/12. Limber, 25, 28/12 (RM, WE, SB). Sandilands, 6, 26/11. Saxilby pit, 30, 7/11. Burton G.P., 1/4; 4, 29/1; 4, 5/12. Bardney, 6, 14-19/11 (EIA, GFL, THW, ADT). Brant Rd. meadows, 6, 5/2; 12, 11/12 (DW, HW). SBO, 2, 17/12. Holbeach, 12 flying to W., 17/12 (CBC).

91. Buzzard. Croxby, 8/1 (DBG, GCH, DR). Scawby, 1st week March (per OSN).

92. Rough-legged Buzzard. Dunston Heath, 6/1-4/2 (ADT, GFL). Two were seen in the air together, 4/2 (WMP).

93. Sparrow Hawk. More records than in 1960, although many were possibly birds on passage and winter visitors. Recorded from Limber, Claxby Wood, Louth, Scawby, Tealby, Market Rasen, Hackthorn, Ingham, Tattershall, Rauceby, SBO, Whaplode, Pinchbeck, Holbeach (CBC, PEG, OSN, ZP, JMBY, JSA, JG, RM, CBC).

It is now known that a pair bred in the Wolds in 1960, and a pair in the fens during 1961 (JM). GP.

99. Marsh Harrier. Tetney, 27/8 (CDN). GP, 5/9. Tattershall pits, 15/1 (PC). Kirton marsh, 14/5 (RKS). Holbeach, 9/7; 2, 25/8; 10/9 (CBC).

100. Hen Harrier. Grimsthorpe, 17/9; a pair, 15/10 (ECS). GP, 16/10; 21/10; 22/10.

102. Montagu's Harrier. GP, 20/5.

103. Osprey. One flying over Thornton Curtis, 13/5 (CLO, JL). Frampton marsh, 6/10 (GM).

105. Peregrine. Barrow Haven, one flying W., 7/1 (HFN). SBO, 3/12.

107. Merlin. S-T Res., 18/4 (CLO). Saxilby, a pair, 20/11 (JL). GP, 5/1.

110. Kestrel. Concentration of sight records in April, Sept. and Oct. similar to 1960. An increase in records April-Aug. possibly indicates a recovery in numbers of breeding pairs. During a rodent plague in Caistor area 17 birds were seen along a 10 mile stretch, Caistor Top to Tealby, 28/10, and on 3/12, 27 Kestrels were seen hovering over a field near Rothwell (JK). GP.

120. Water Rail. Barrow Haven, 26/12; 31/12 (HFN). One caught in outbuildings of Carre's Grammar School (CGSch). Low Farm Tetney, 24/12 (CDN). GP, 30/9; singles, Dec.

125. Corncrake. GP, 26/5 (CGSch). New York, calling for three days, April (PC).

131. Oystercatcher. *Breeding:* Tetney, 3-4 pairs (2 of these in a potato field); North Coates (DBG, BAP, CDN); GP, 2 pairs. Peak numbers: GP, 4,000, mid. Sept.; Holbeach, up to 550, 13/8-Dec. (CBC). *Inland:* Bardney, 20/8 (ADT).

133. Lapwing. Heavy N.W. passage, Grimsby, 6/11 (EC). GP, passage late Oct. and early Nov. Hard weather movement, 28/12.

134. Ringed Plover. *Breeding records:* Humberstone, 1 pair; North Coates, 3 pairs (DBG). GP, 16 pairs. *Inland records:* Bardney, small numbers, April-June, max. 3, 16/5; July-Oct. max. 6, 26-27/8. Lincoln S.F., 30/9; 1/10. Grantham S.F., recorded Aug.-Sept., max. 20, 17/8. SBO, small numbers, July, Aug., Oct. (EIA, THW, KA, ADT, LC, CLB, EJR).

135. Little Ringed Plover. *Breeding records:* 11 pairs at five sites, of which 6 pairs bred (RM, SB, DR, EIA, THW, CBC, RVC). *Passage records:* Burton G.P., 20/8 (KA). Bardney, small numbers 13/7-10/9, max. 9, 10/9 (RKC, FLA, ADT, KA, GFL). Grantham S.F., 10/8-19/9, max. 4, 17/8 (CLB, LC, CAJ). Freiston, 2, 26/8 (CBC).

136. Grey Plover. *Inland:* SBO, 23/12. GP.

140. Golden Plover. Cowbit Washes, 5,000, 4/3 (EJR). Honington, 500, 18/3 (CGSch). Dawsmere, 200, 30/7 (CBC). GP, hard weather movement, 28/12.

143. Turnstone. GP, max. 36, 28/8. *Inland:* Grantham S.F., 16-17/8 (LC, CLB).

145. Snipe. Small influx Bardney, 9/8. Grantham S.F., 500, 14/10 (KA, CGSch, CLB, LC, CBC). GP.

148. Woodcock. Present during breeding season, Linwood Warren N.R., Twyford Forest, West Morkeny Wood (LC, ADT). A Woodcock feeding on a Scunthorpe bird table, 28/12 (FN). GP.

150. Curlew. *Breeding records:* 4-5 pairs Manton (RM). Grantham S.F., 120, 3/8 (LC, CLB). GP.

151. Whimbrel. *Early records:* Wainfleet, 12/2 (CBC); GP, 3/4. Spring passage, GP, 11-15/5. Autumn passage, last week Aug.-Sept. max. 20, 29/8. *Inland:* SBO, 2, 28/8; 15/9; 3, 7/10.

154. Black-tailed Godwit. Barrow Haven, 21, 27/8 (HFN). North Coates, 2, 19/4; 1-6/8 (CDN, GCH). Sandilands pit, 2, 22/5 (JL). GP, small numbers Aug. and Sept. Bardney, 29-30/7; small numbers Aug., max. 4, 20/8 (EIA, THW, KA, RM, EH, RKC, FLA, GFL, ADT). Holbeach, 6/8-8/10, peaks, 45, 13/8; 36, 17/9. Sutton Bridge, 5, 2/9 (CBC). *Winter:* GP, 2, 25/11; 4, 16/12.

155. Bar-tailed Godwit. Dawsmere, 1,500 and Wainfleet, 1,000, at end of Aug. (CBC). GP.

156. Green Sandpiper. *Spring:* SBO, 3 until end of May. *Autumn:* New Holland, 12/8; 27/8 (HFN). Brigg, 5, 19/8 (RM). Stallingborough, 2, 14/10 (KR). North Coates, 4/8 (CDN). GP, small numbers Aug. and Sept., 2, 26/9. Bardney, 17/6-10/9, max. 10, 9/8 (ADT, THW, EIA, KA, RM, GFL, RKC, L-C, FLA). L.S.F., 20/8-22/10, max. 10, 19/8 (KA, ADT). Grantham S.F., 25/7-30/9, max. 14, 10/8 (CLB, LC, EIA, THW, CAJ, CGSch). SBO, singles until 21/9. Langtoft pits, 2, 22/8; 13/7 (RVC).

157. Wood Sandpiper. *Spring:* Bardney, 2, 14/5; 16/5; 8, 23/5; 8/5 (RM, EH, DW, HW). *Autumn:* Bardney, 10/9 (RM, EH). Grantham S.F., 15/7; 16/7; 2, 10/8; 3-16/8; 2/9; 7/9; 4, 14-15/9; 2, 16/9; 3, 17/9 (CLB, LC, CAJ, CGSch). SBO, 20/7; 29/7.

162. Spotted Redshank. Tetney, 4, 20/8; 27/8 (CDN). Barrow Haven, 12/8 (HDN). East Halton, 29/7 (AC). GP, 13/8; 31/8. L.S.F., 7/9; 20/9 (KA, ADT). Bardney, 20/6; 8/7; 15/7; 9/8; 12/8; 2, 15/8; 24/8; 3, 1/9; 2, 2/9; 2, 3/9; 4/9; 10/9 (RM, WE, ADT, KA). Grantham S.F., 25/8; 1/9; 4, 2/9; 14/9; 15/9; 23/9; 30/9 (EIA, THW, LC, CLB, CGSch). SBO, 2, 22/9. *Winter:* Dawsmere, 12/2. Holbeach during Dec. (CBC).

165. Greenshank. *Spring:* Grantham S.F., 20/5 (EIA, THW). *Autumn:* records from Barrow Haven, Brigg, Tetney Haven, Bardney, L.S.F., Grantham S.F., Holbeach (up to 20 during Oct.), Langtoft, SBO. *Winter:* Freiston, 3/12 (CBC). GP.

169. Knot. *Inland:* Bardney, 29/7 (ADT). Grantham S.F., 17/8 (LC, CLB). *Coastal:* GP, autumn max. 20,000, 27/8; 30,000, 25/9.

171. Little Stint. Almost as numerous as in 1960. Tetney, 16/9 (CDN). GP, 1/8; 2, 24/9; 2/10; 2, 22/10. Bardney, 3, 22/7; 20-21/8; 26/8; 3, 27/8; 29/8; 2, 2-3/9; 10/9 (KA, ADT, RM, EH, WE). Grantham S.F., 15, 4/8; 13/8; 3, 17/8; 26/8; 15-16/9; 2, 30/9 (CGSch, EIA, THW, CLB, LC, CAJ). Friskney, up to 12, July and Aug. (REMP). Holbeach, up to 3, 23/9-8/10; 5, 9/10. Langtoft G.P., 2, 6/8 (CBC).

173. Temminck's Stint. Bardney, 27/8 (ADT). The 9th Lincolnshire record in this century.

176. Pectoral Sandpiper. L.S.F., 27/9-11/10 (KA, ADT, RKC, RM). Wisbech S.F., 17-21/9 (CBC). Langtoft G.P., for five weeks during Sept.; last seen 8/10 (REMP, RVC). (see *British Birds*, 55, 573).

178. Dunlin. *Inland: Winter:* Kirkby-on-Bain, 4, 17/1. Grantham S.F., 26, 2/1; 18, 5/1; 50, 8/1. SBO, 60, 4/11; 200, 19/11; 300, 17/12. Bardney, 5, 1/5 and 18/5. *Autumn:* Bardney, small numbers July-mid Sept., max. 18, 30/7; 25, 2/9. Grantham S.F., max. 16, 18/10 (KA, RM, LC, CLB, CGSch, EIA, THW, ADT). *Coastal:* GP, 500, 31/8; 2,000, 25/9.

179. Curlew Sandpiper. Tetney, 2, 16/9 (CDN). Bardney, 22/7; 3, 23/7; 24/7; 25/7; 5, 20-26/8 (KA, ADT, RM, EW). Grantham S.F., 3, 19/9; 4, 20/9; 7, 21/9; 23/9 (CLB, LC). SBO, 2, 29/7; 9/8; 11/8. Holbeach, 13/8; 10/9; 6, 17/9; 23, 1/10. Nene mouth, 19/10 (CBC).

181. Sanderling. *Inland:* Bardney, 29/8; 4/9 (ADT). SBO, 22/10. GP.

184. Ruff. *Spring:* Grantham S.F., 43, 11/3; 20, 18/3; 2, 22/4 (WMP, CGSch). GP, 15/4. *Autumn:* Barrow Haven, 3, 12/8 (HDN). Tetney, up to 7, 20/8-11/10 (CDN). Huttoft pit, 15, 18/9. GP, 2, 13/8. Bardney, small numbers, 8/7-22/10, max. 20, 20/8 and 27/8 (RM, SB, DR, KA, ADT). L.S.F., 2, 20/8; 3, 26/8; 4, 2-4/9; 8/10 (KA, ADT). Grantham S.F., max. 20, 25/8; 60, 19/9; 30, 30/9; 50, 27/10 (LC, CLB, CAJ, CGSch). SBO, 2, 2/8; 9/8; 22/9. *Winter:* Grantham S.F., up to 30 during Jan.; 30, 7/11; 12, 26/11; 10, 7/12 (EIA, THW, CLB, LC).

187. Grey Phalarope. Holbeach, 17/9; 19/10 (CBC).

193. Arctic Skua. One, North Coates, 27/12 (CDN). GP, small passage end of July-Sept. SBO, one flying S.W. 5/8. Holbeach, (dead) 26/11; 2, 17/2; 7 flying inland, 19/10. Nene mouth, one flying W., 19/10 (CBC).

194. Great Skua. GP, 23/9; singles early Oct., 3, 22/10. Holbeach, flying S.W., 8/10; up to 6, 19/10 and one to S.W., 29/10 (CBC).

195. Pomarine Skua. Holbeach, 6 arrived from N.E., 19/10 (when 27-50 on Norfolk side of Wash) (CBC).

196. Long-tailed Skua. SBO, 7/10.

198. Great Black-backed Gull. *Inland:* Woodhall Spa refuse tip, 20, 17/1 (ADT, GFL). Sleaford refuse tip, 5, 25/11 (CGSch). Grantham S.F., 15/7. SBO, S.W. passage, 28/7; 29/7; 15, 4/11. Spalding refuse tip, max. 100, 9/1; 50, 4/3; 2, 27/5 (EJR). Langtoft pit, 25/12 (RVC). *Coastal:* Chapel Point, southerly passage, 23/9 (RKN). Holbeach, max. 700, 3/12; 500, 19/12 (CBC). GP.

199. Lesser Black-backed Gull. *Inland:* Barrow Haven, 4, 9/7; a bird of the Scandinavian race, *L. f. fuscus*, 27/8 (HDN). Immingham, 8, 1/10 (EIA, THW). Lambert Hill Pond, 30, 21 & 28/10; 15, 18/11 (KR). Bardney, 9/8; 23/8 (ADT). Stapleford Old Moor, flying S.W., 23/6 (ADT). SBO, singles, 29/7; 21/9. Spalding refuse tip, 2, 24/2. Langtoft pit, 2, flying west, 5/3 (EJR). GP.

202. Glaucous Gull. GP, 6/8.

208. Black-headed Gull. *Breeding records:* Wainfleet marsh, 5-600 pairs (CTB). Benington/Leverton, 150 pairs (CBC). Bardney, *ca.* 30 pairs (ADT); new site.

211. Kittiwake. Wisbech S.F., 22/10. Holbeach, 150 arrived from N.E. at dusk, 3/12 (CBC).

212. Black Tern. *Spring:* Read's Island, 14/5 (CLO). Ferriby, 13/5 (JL). Bardney, 4, 14/5; 3, 16 & 18/5; 17/6 (DW, HW, ADT, KA). SBO, 2, 20/5. Dawsmere, 1/6 (CBC). Wisbech S.F., 28/5 (RH). Langtoft pit, 2, 3/6 (RVC). *Autumn:* Saltfleet Haven, 5, 17/8 (CLO). GP, small numbers, Aug.-Sept. Bardney, 22, 8/8; 10, 9/8; last record, a single, 30/9 (RM, EH, ADT, KA, GFL). SBO, 3, 22/9. Dawsmere/Holbeach, 30/7; 23/9 (CBC). Grantham S.F., 2-9/9 (CLB, LC, CGSch). Denton Res., 2, 1/9 (CLB).

217/218. Common/Arctic Tern. *Inland breeding records of* Common Terns: Kirkby-on-Bain, 4 nests but success unknown (RM. DR, EH). Langtoft pit, 10-15 pairs (CBC). *Coastal passage:* GP, max, *ca.* 500, 26/8.

222. Little Tern. *Inland:* Bardney, 2, 2/8 (FN). A poor breeding season, although an increase at GP, (16 pairs) perhaps due to good wardening. North Coates, one pair attempted, but later washed out by high tide (DBG).

223. Sandwich Tern. *Inland:* Grantham S.F., 4/8 (LC, CLB). SBO, 2 flying S.W., 23/8. GP.

224. Razorbill. Mablethorpe, 29/7 (CGSch). GP.

226. Little Auk. North Coates, 3, 4/11 (CDN).

227. Guillemot. GP, 6/1 (CGSch). North Coates, 3, 4/11 (CDN).

230. Puffin. GP, 2, 4/11. Holbeach St. Marks, 3/7 (EJR).

234. Woodpigeon. A flock of 3,000 passed over Barton-on-Humber, 26/11; turning they flew up the R. Humber (HDN).

235. Turtle Dove. North Coates, 24/4, an early record (CDN).
Collared Dove. Breeding recorded at Grimsby (EJT), Greetwell (RM), GP (5 pairs), where 90 were counted in two dead trees on 11/10. Holbeach (since 1960) (RKS). There is evidence of a further spread of this species in Lincolnshire; Gainsborough, 7, 29/11 (EIA, THW). Limber, 24/4 (RM). SBO, 28/8. Boston, 19/7; 5 in Nov. (REMP).

248. Long-eared Owl. Four pairs nested North Lincs.; only two were successful (RM). One pair reared three young near Market Rasen (ADT).

249. Short-eared Owl. Breeding only confirmed at GP, although numerous summer records from North Coates, Terrington, Sutton Bridge, Holbeach, Frampton, Kirton, Crowland Washes, Leverton, Friskney (CBC, DBG). Recorded at 18 localities during the winter.

255. Swift. *Early record:* GP, 27/4. *Late record:* Low Farm Tetney, 11/10 (CDN).

264. Lesser Spotted Woodpecker. Recorded from, Limber, Gainsborough, where breeding confirmed, and Troy Wood (JSA, RM).

265. Wryneck. GP, 5/9.

271. Woodlark. RM had no records for 1961.

272. Skylark. Heavy S.W. passage (2,500 per hour) over Holbeach, 8/10 (CBC).

273. Shorelark. Cleethorpes, 19/3 (GCH). GP, 2, during first week April.

274. Swallow. *Late records:* GP, 25/11. Cranwell, 10/11 (flying N.E.) (CAEK).

276. House Martin. *Late record:* Boston, 12/11 (CBC).

278. Golden Oriole. A male near Gainsborough, 21/5 (RM, SB, DR).

281. Hooded Crow. Tetney, up to 8 during the spring; 3, 29/12 (CJS, CDN). GP, 20, 14/1. *Inland:* SBO, 14/11. Grimsthorpe, 17/12 (ECS).

282/283. Rook/Jackdaw. Large roost of both species Newsham Wood, 5,000, 11/2; 15,000, 4/11 and 11/11 (KR).

284. Magpie. A marked decline in Benington, Limber, Market Rasen and Coningsby districts during 1961 (RM, RKC, JSR).

286. Jay. *Coastal:* GP, 28-29/8; 30-31/8.

290. Coal Tit. Influx in Scunthorpe garden, late December (FN). *Coastal:* GP, 4/11.

294. Long-tailed Tit. Decline in breeding pairs at Limber and Brocklesby Woods (RM).

295 Bearded Tit. GP, 2, 30/3. (see *British Birds*, 55, 577).

296. Nuthatch. A pair bred near Gainsborough. One, Limber, 5/3 (RM, SB, DR, CC).

298. Treecreeper. *Coastal:* GP, 16/4.

302. Fieldfare. First arrivals (exceptionally early) North Coates, 26/8 (CDN). GP, 4/9; 13/9. Freiston, 23/9 (CBC). SBO, 2/9; 40, 3/9. Tetney, 1,000, during cold weather movement, 28/12 (CDN).

304. Redwing. Heavy westerly passage over Pinchbeck, 18/10; 30/10; 31/10 (EJR). Tetney, 1,000 during cold weather movement on 28/12 (CDN). GP.

307. Ring Ouzel. Low Farm Tetney, 16/4 (CDN). Louth, 15/10 (CLO). GP, 16/5; 20/5; 21/5; 22/10.

308. Blackbird. Massive immigration along east coast, 5/11. Low Farm Tetney, *ca.* 4,000 (CDN). Flocks of 50-100 arrived North Coates from direction of Spurn Point (GCH). Large numbers on the coast from Sandilands—GP. (EIA, THW). An estimate of 100,000 arrived GP, where 858 were caught and ringed. Next day Hendale Wood, Limber was "alive with blackbirds" and 250 were counted on two adjacent fields (RM). Large numbers, Lindum cricket ground, 6/11 (GFL).

311. Wheatear. A pair seen to enter hole in bank of R. Welland at Surfleet Seas End, 6/5 (EJR). *Spring passage:* GP, 42, 7/4.

317. Stonechat. A pair bred L.S.F. (F-C). This is the first breeding record in the county since about 1947. There were more records in 1961 than for many years. Barrow Haven, 26/11 (HFN). Low Farm Tetney, 5/3-23/4; 1/10 (CDN, CJS). Tealby Park, 13/8 (JG). GP, 13/10; 4/11; 2, 25/11; 4/12. L.S.F., 6/8; 29/10; 2, 18/11 (KA, ADT). Coleby Low Fields, 23/5 (DW, HW). SBO, 29/7; 4 during Oct.; one until 25/11. Spalding, 28/5 (EJR).

318. Whinchat. *Breeding records:* Branston Booth fen, Stapleford Old Moor, Risby Warren (RM, ADT). *Inland passage:* Surfleet Seas End, 14, 26/8 (EJR). SBO, 9-26/8, max. 7, 9/8; 35, 28/8. Brattleby Heath, 10/8 (ADT).

320. Redstart. *Breeding records:* Linwood Warren (2 pairs), Scawby, Gainsborough district (RM, ADT). *Spring passage:* Low Farm, Tetney, 4, 23/4; 1/5; 28/5 (CDN). Donna Nook, 26/4 (RKN). GP, 40, 7/4. Sleaford, 6-7/4 (CGSch).

321. Black Redstart. Low Farm, Tetney, 1/10 (CDN). Near Grantham, 18/3 for several days (GNH). GP, 6/4; 22/10. Pinchbeck, 8/10. Pinchbeck West, 2, 6/11 (EJR, BC).

322. Nightingale. Low Farm, Tetney, 30/8 (CDN). SBO, 6/9. Autumn passage records are rare.

327. Grasshopper Warbler. *Singing males:* Linwood Warren, Riseholme Park, Stapleford Old Moor, Bourne Wood, Twyford Forest, Lincolnshire Gate (LC, ADT, CGSch). *Autumn:* SBO, 9/8.

333. Reed Warbler. Several pairs bred Bardney, Burton G.P. (ADT). *Coastal:* GP, 30/8; 2, 31/8.

334. Marsh Warbler. Low Farm, Tetney, trapped, 8/10 (CDN). The first record for Lincolnshire.

343. Blackcap. A male feeding on skeleton of Christmas turkey, Limber, 8-15/1 (RM, CC). Dead, Scopwick, 8/11 (CGSch). GP.

346. Garden Warbler. Sleaford S.F., 1/1 (WMP). Winter records are exceptionally rare. GP.

356. Chiffchaff. Heard in breeding season, Riseholme Park (ADT). *Passage:* GP, singles, April; 2, 20/8; 18/9. SBO, 11/7.

357. Wood Warbler. L.S.F., 6/8 (ADT).

368. Pied Flycatcher. No spring records. *Autumn:* Barrow Haven, 17/9 (HFN). Low Farm, Tetney, 6, 3/9 (CDN). GP, 50, 30/8; 30, 1/9; 35, 5/9. Holbeach, 23/9. Boston, 14/8 (CBC). Wigtoft, 17-18/9 (RKS). SBO, 28/8.

370. Red-breasted Flycatcher. SBO, 1/10.

371. Dunnock. Unusual numbers on east coast, Aug. and Sept. Low Farm, Tetney, increase noted, 17/9-1/10; 40, 24/9; seen leaving the area to S.W., 30/9 and 1/10; one ringed at Spurn Point B.O. trapped, 15/10 (CDN). GP, 300+, 27/8; 100+, 1/9; 200, 19/9; 100, 21/9 and 30/9 (*See* ringing recoveries).

376. Tree Pipit. Bred Linwood Warren, Stapleford Old Moor (ADT). GP, a male holding territory for several weeks during May.

379. Rock Pipit. *Inland:* Boston Docks, 2-3, 3/12 (CBC). SBO, 29/10; 3/12; 17/12. GP.

380. Pied/White Wagtail. Northerly passage, North Coates, 14-15/3 (CDN). SBO, increase to 80 by 18/9. Light S.E. passage last week Sept. Surfleet Seas End, 22 to S.W., 26/8 (EJR). GP.

381. Grey Wagtail. One present throughout the year at Grantham (CGSch). Boston, 28/5. Pinchbeck, 16/6 (AH). *Winter records:* Low Farm, Tetney, Laceby, Scawby, Market Rasen, Boston Docks, Spalding, SBO. GP.

382. Yellow Wagtail. L.S.F., a normal female paired with an "aberrant" male with pale grey head and mantle (ADT). *Coastal passage:* GP, small numbers, 26/8-14/9.

383. Waxwing. Barrow Haven, 2, 16/12 (HFN). Grimsby, 15/1 (EJT). New Waltham, 2, 3/12 (EVW). Louth, 25/11; 3/12 (EAR). Scunthorpe, 9, 15/11. Goxhill, Nov. Tealby, 3/12. Limber, 3, 3/12 (RM). Boston, autumn (REMP).

384. Great Grey Shrike. S-T Res., 22/1. Nettleton, 4-12/2 (RM, SB, DR, CC, JK). GP, 2, 22/10.

388. Red-backed Shrike. GP, 23/5; 6/6; 2, 10/6; 1/9 (spring records are rare).

391. Hawfinch. Greetwell Warren, 12/3. Sturton Wood, 29/4 (RM, CC).

393. Siskin. Limber, 8, 1/4. Scawby, 6, 2/4 (RM). Kirkby Moor, Woodhall Spa, 26/3 (HW, DW). *Passage:* Low Farm, Tetney, 3 flying S.W., 29/10 (CDN). GP, 10, 20/9; 20, 21/9; 11, 26/9. Holbeach, one to W., 29/10 (CBC).

395. Linnet. Barrow Haven, heavy westerly passage, 24/9 (HFN). GP, many thousands flying S.W., 21-22/9. Holbeach, 3,500 to S.W., 8/10 (CBC).

396. Twite. Little Limber, 6, 5/10 (RM); inland records are unusual. GP.

397. Redpoll. A pair nested successfully near Scunthorpe (RM, SB, DR, WE). Stapleford Old Moor, at least 2 pairs present during June (ADT).

400. Serin. GP, 16/5. The first record for Lincolnshire. (see *British Birds*, 55, 583).

401. Bullfinch. An increase noted in several districts. *Coastal:* GP, 3/1; 4/8; 5, 25/11.

408. Brambling. Large numbers, Branston, Coach Road, Lincoln during Jan./Feb. Nocton fen, a flock of *ca.* 1,000, 20/3 (ADT).

422. Lapland Bunting. North Coates, regular during Jan., 4, 29/10-9/12 (CDN). Boston Point, 10/11 (EJR). Holbeach, 8, 29/10; up to 4, 12/11-17/12. Benington, 19/11 (CBC).

423. Snow Bunting. North Coates, up to 20 until 5/3; 60, 4/11. Low Farm, Tetney, *ca.* 60, 5 & 18/11 (CDN). GP, winter max. 400, 7/12.

424. House Sparrow. Low Farm, Tetney, 2,000 recorded, 23-24/9 (CDN). GP, heavy S.W. passage, 22/9; 600, 29/10; 700, 3/11. A tremendous increase in Limber area (RM).

425. Tree Sparrow. GP, 500, 29/10.